REPORT RESUMES

ED 019 235 SE 003 936

REORGANIZED SCIENCE CURRICULUM, 4B, FOURTH GRADE SUPPLEMENT.
MINNEAPOLIS SPECIAL SCHOOL DISTRICT NO. 1, MINN.
EDRS PRICE MF-$0.75 HC-$5.48 135P.

DESCRIPTORS- *CURRICULUM DEVELOPMENT, *CURRICULUM, *ELEMENTARY SCHOOL SCIENCE, *GRADE 4, *TEACHING GUIDES, ASTRONOMY, BIBLIOGRAPHIES, BIOLOGY, EARTH SCIENCE, PHYSICAL SCIENCES, SCIENCE EQUIPMENT, SCIENCE MATERIALS, SCIENCE ACTIVITIES, SCIENCE COURSES, MINNEAPOLIS, MINNESOTA,

THE SIXTH IN A SERIES OF 17 VOLUMES, THIS VOLUME PROVIDES THE FOURTH GRADE TEACHER WITH A GUIDE TO THE REORGANIZED SCIENCE CURRICULUM OF THE MINNEAPOLIS PUBLIC SCHOOLS. THE MATERIALS ARE INTENDED TO BE AUGMENTED AND REVISED AS THE NEED ARISES. THIS FOURTH GRADE SUPPLEMENT IS IN TWO PARTS. PART 4A CONTAINS THE INTRODUCTORY MATERIAL, THE CONCEPTS SECTION AND THE RESOURCE UNITS SECTION. RESOURCE UNITS FOR GRADE 4 INCLUDE (1) AIR, (2) LIVING THINGS--ECOLOGY, AND (3) ROCKS. THIS VOLUME, 4B, CONTAINS THE SECTIONS ENTITLED (1) BIBLIOGRAPHY, BOOKS, (2) BIBLIOGRAPHY, FILMS, AND (3) EQUIPMENT AND SUPPLIES. (DH)

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BIBLIO. - BOOKS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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A SELECTIVE BIBLIOGRAPHY
of
BOOKS FOUND USEFUL
in the
TEACHING OF THE SCIENCE UNITS

for
Grade Four

Correlated to the Mojor Topics as found in the
Reorganized Science Curriculum

Minneapolis Public Schools
Science Department
8-24-64

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The annotations for books found on the following pages were obtained from many bibliographies which were consulted in the preparation of this list.

I. The Earth

A. History

A. History	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Andrews, Roy Chapman. 1959 IN THE DAYS OF THE DINOSAURS ** Random House. $2.19 Tells young readers many facts about the age of dinosaurs, including a hunt for fossils in the Gobi desert.		X		Good	Easy
Andrews, Roy Chapman. 1953 ALL ABOUT DINOSAURS * Random House. $2.37 A well-known paleontologist presents a wealth of information about dinosaurs and tells how modern scientists learn about them.		X		Average	Average
Colbert, Edwin H. 1958 MILLIONS OF YEARS AGO * Crowell. $2.75 A paleontologist's account of his work, and an excellent description of some of the prehistoric life of North America.	X			Average	Average
Crosby, Phoebe. 1962 JUNIOR SCIENCE BOOK OF ROCK COLLECTING ** Garrard. $2.50 An excellent student resource containing some better than average motivational material related to this major topic. Labels are well used.		X	Good	Good	Average

* Good
** Excellent

I. The Earth - A. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Dickinson, Alice. 1954 THE FIRST BOOK OF PREHISTORIC ANIMALS * Watts. $2.50 An introduction to the prehistoric world and the life that inhabited it. Tells of the succession of animals that have populated the earth.		X		Average	Difficult
Epstein, Sam, and Beryl Epstein. 1956 PREHISTORIC ANIMALS * Watts. $3.95 A sound view of the early evolution of animal life, and an account of the fossil traces which led to man's knowledge of ancient animals.	X				
Grey, Vivian. 1960 THE FIRST BOOK OF ASTRONOMY * Watts. $2.50 A well presented history of the earth, with informative diagrams.	X	X		Average	Average to Difficult

* Good
** Excellent

I. The Earth - A. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Harland, W. B. 1960 THE EARTH: ROCKS, MINERALS, AND FOSSILS ** Watts. $4.95 The nature and history of the earth, the evolution of life, the evidence revealed by fossils. Includes valuable information for the amateur geologist and rock collector. Profusely illustrated introduction to geology for boys and girls.	X	X		Good	Difficult
Posin, Daniel Q. 1961 WHAT IS A DINOSAUR ** Benefic Press. $1.80 A simple review of dinosaurs -- the kinds, the life cycle, and the habitat.	X	X		Good	Average
Scheele, William E. 1954 PREHISTORIC ANIMALS ** World. $5.95 An account of the first five hundred million years of life on earth. Excellent illustrations and charts.	X	X			
Scheele, William E. 1955 THE FIRST MAMMALS ** World. $4.95 Traces the development of mammals during the last 60 million years, with descriptions and drawings of important animals.	X				

* Good
** Excellent

I. The Earth - A. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
White, Anne Terry. 1951 PREHISTORIC AMERICA ** Random House. $1.95 An elementary view of prehistoric times as related through present-day findings of fossils.	X			Good	Difficult
Wyler, Rose and Gerald Ames. 1956 THE STORY OF THE ICE AGE * Harper. $2.92 A picture of the earth's glacial ages, describing plant, animal, and human life. (For better students.)				Good	Difficult

* Good
** Excellent

I. The Earth

B. Physical features	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Clarke, Arthur C. 1960 THE FIRST FIVE FATHOMS: A GUIDE TO UNDERWATER ADVENTURE ** Harper. $2.92 Shows skin divers at work.	X			Good	Average to Difficult
Harland, W. B. 1960 THE EARTH: ROCKS, MINERALS AND FOSSILS ** Watts. $4.95 Profusely illustrated introduction to geology for boys and girls.	X	X		Good	Difficult
Marcus, Rebecca B. 1962 THE FIRST BOOK OF GLACIERS ** Watts. $2.50 Tells young readers how glaciers develop and how they affect the earth's surface.		X			Average
Pough, Frederick H. 1953 ALL ABOUT VOLCANOES AND EARTHQUAKES * Random House. $2.37 Maps, charts, and pictures are utilized to explain some of the phenomena connected with volcanoes and earthquakes.	X				

* Good
** Excellent

For discussion
purposes only

I. The Earth - B. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Radcliffe, James T. 1962 THE YOUNG PATHFINDER'S BOOK OF THE POLAR REGIONS * Hart. $3.95 Good resource book dealing with animal life in the frigid zone.	X	X		Good	Difficult
Selsam, Millicent E. 1959 BIRTH OF AN ISLAND ** Harper. $2.92 The story of the formation of a volcanic island and the various changes through which it becomes inhabited.	X				Difficult
Shannon, Terry. 1960 ABOUT CAVES * Melmont. $2.50 About cave formations, and famous discoveries, for young children.				Good	Average
Sterling, Dorothy. 1956 THE STORY OF CAVES * Doubleday. $3.00 Explains the formation and nature of caves and the sport of spelunking.	X			Good	Average
Zim, Herbert S. 1953 WHAT'S INSIDE THE EARTH? ** Morrow. $2.60 Explores the structure of the earth.	X	X	Good	Good	Average

* Good
** Excellent

SCIENCE RESOURCE BOOK BIBLIOGRAPHY - Grade Four
(Addendum)

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I. The Earth

B. Physical features	Tchr Ref.	Illus	Learning Activities	Pupil Interest	Reading Level
Lauber, Patricia 1961 JUNIOR SCIENCE BOOK OF ICEBERGS AND GLACIERS ** Garrard $2.25 This book tells of the sinking of the Titanic and the work of the International Ice Patrol. It explains how glaciers are formed and where icebergs come from. It tells, too about the Ice Age and the prospects of another Ice Age to come. This is a vivid scientific report of the Big Ice that has baffled the world for centuries.			Good	Good	Easy
Lauber, Patricia 1965 JR. SCIENCE BOOK OF VOLCANOES ** Garrard $1.98 The awesome forces in the earth that create volcanoes are described in this book for young readers. We learn how this strange kind of mountain grows, becomes active in eruptions, and how it becomes quiet or dormant, for centuries.	X	X		Good	Easy
Wyckoff, Jerome 1962 THE STORY OF GEOLOGY: Our Changing Earth Through the Ages ** Golden Press $4.99 Beautifully illustrated for young readers.	X				

* Good
** Excellent

I. The Earth

C. Rocks and minerals	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Buehr, Walter. 1957 OIL, TODAY'S BLACK MAGIC * Morrow. $2.78 How oil was formed, and how it is now collected, refined, and used.				Average	Average
Clemons, Elizabeth. 1960 ROCKS AND THE WORLD AROUND YOU ** Coward-McCann. $3.50 Young rock collector's guide.	X	X	Good	Good	Average
Crosby, Phoebe. 1962 JUNIOR SCIENCE BOOK OF ROCK COLLECTING ** Garrard. $2.50 An excellent student resource containing some better than average motivational material related to this major topic. Labels are well used throughout.		X	Good	Good	Average
Gringhuis, Dirk. 1960 ROCK OIL TO ROCKETS: THE STORY OF PETROLEUM IN AMERICA * Macmillan. $2.55 Child's introduction to history of petroleum.	X	X			

* Good
** Excellent

I. The Earth - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Harland, W. B. 1960 THE EARTH: ROCKS, MINERALS AND FOSSILS ** Watts. $4.95 Profusely illustrated introduction to geology for boys and girls.	X	X		Good	Difficult
Hyler, Nelson W. and Blackwood, Paul E. (Ed.). 1960 THE HOW AND WHY BOOK OF ROCKS AND MINERALS * Grosset. $2.08 (paper - $1.00) Answers science-minded young readers' questions about the earth's surface.	X	X		Good	Average to Difficult
Irving, Robert (pseud. of Irving Adler). 1956 ROCKS AND MINERALS AND THE STORY THEY TELL * Knopf. $3.29 A full introduction to geology, with emphasis upon the knowledge that a young rock collector can gain from his specimens.	X	X	Average	Good	Average to Difficult
Markun, Patricia Moloney. 1960 THE FIRST BOOK OF MINING * Watts. $2.50 Informative story of the mining of metals and coal.				Average	Average

* Good
** Excellent

I. The Earth - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Pearl, Richard M. 1961 WONDERS OF ROCKS AND MINERALS * Dodd. $3.00 For boys and girls.	X				
Podendorf, Illa. 1958 THE TRUE BOOK OF ROCKS AND MINERALS * Children's Press. $2.00 Basic introduction to the field of mineralogy.		X	Good	Good	Easy
Syrocki, John. 1959 WHAT IS A ROCK? * Benefic. $1.80 Basic information on how rocks tell us about life long ago, the earth's changes, and water levels. Colored illustrations supplement the text.		X	Average	Good	Easy
White, Anne Terry. 1959 ROCKS ALL AROUND US * Random. $2.19 How rocks are formed and some of the materials man makes out of rocks. Includes information about some common rocks but is not intended primarily as a book to help identify rocks.		X		Good	Easy to Average

* Good
** Average

I. The Earth - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Zim, Herbert S. 1959 DIAMONDS * Morrow. $2.78 Very informative for boys and girls.		X		Good	Average to Difficult
Zim, Herbert S. 1961 ROCKS AND HOW THEY WERE FORMED * Golden Press. $1.69 (paper - $ .69) Factual book for young readers.	X	X		Good	Difficult

* Good
** Excellent

SCIENCE RESOURCE BOOK BIBLIOGRAPHY - Grade 4
(Addendum)

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I. The Earth

C. Rocks and minerals	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Heavilin, Jay 1964 ROCKS AND GEMS ** Macmillan Co. $2.04 This book contains colorful pictures and excellent descriptions helpful in identifying rocks and gemstones to be found in the earth around us. There is much helpful information for anyone wanting to start a rock collection.		X		Good	Easy
Nasca, Donald and Glenn Sprague 1964 THE ROCK HOUNDS * F. A. Owen Pub. Co. $1.90 A city boy discovers the fun of collecting, identifying, and learning about rocks, as he exchanges letters across the U. S. Special emphasis on kinds of rocks and formations.		X	Good	Good	Average
Reinfeld, Fred 1963 PICTURE BOOK OF ROCKS AND MINERALS ** Sterling $1.99 This book begins with a study of the earth, various methods used for dating it, the ages of geologic time, and theories of how the earth was formed. You will read how mountains were formed and worn down, how water falls were created and caverns developed, coal deposits formed and diamonds created; how precious stones are taken from the earth. The author makes crystal clear the entire range of minerals, from the tiniest particle of sand.	X	X	Average	Average Good	Difficult

* Good
** Excellent

I. The Earth

D. Soils

D. Soils	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Harland, W. B. 1960 THE EARTH: ROCKS, MINERALS, AND FOSSILS ** Watts. $4.95 Profusely illustrated introduction to geology for boys and girls.	X	X		Good	Difficult

* Good
** Excellent

SCIENCE RESOURCE BOOK BIBLIOGRAPHY – Grade 4
(Addendum)

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I. The Earth

D. Soils	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Wilcox, Don 1965 DAVID'S RANCH ** Melmont $2.00 This is an authentic western adventure story, fully illustrated, that is rich in scientific information about flood control and soil conservation.				Good	Average

* Good
** Excellent

I. The Earth

E. Water

	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Clarke, William D. 1961 THE YOUNG PATHFINDER'S BOOK OF OCEANS, STREAMS AND GLACIERS * Hart. $3.95 Marine biologist's book for young readers.	X	X		Average	Average
Dickey, Albert. 1958 ABOUT RIVERS * Melmont Publications. $2.50 For young readers.				Good	Easy
Poole, Lynn and Gray. 1961 DANGER! ICEBERGS AHEAD! ** Random House. $2.19 About the nature of icebergs and the work of the International Ice Patrol.		X		Good	Easy to Average
Smith, F. C. 1959 THE FIRST BOOK OF WATER ** Watts. $2.50 About its chemistry, uses and conservation.	X	X	Good	Average	Average

* Good
** Excellent

I. The Earth - E. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
White, Anne Terry. 1957 ALL ABOUT GREAT RIVERS OF THE WORLD ** Random. $1.95 The story of five great rivers, how they have developed, and how they have affected the land and people along their banks.		X		Good	Average

* Good
** Excellent

SCIENCE RESOURCE BOOK BIBLIOGRAPHY - Grade 4 (Addendum)

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I. The Earth

E. Water

	Tchr. Ref.	Illus	Learning Activities	Pupil Interest	Reading Level
Rosenfeld, Sam 1965 SCIENCE EXPERIMENTS WITH WATER ** Harvey House $5.00 What enables a steel ship to float? Can a fish drown? Is the sky really blue? Why does soap clean? What is a Cartesian Diver? What causes a submarine to rise and to sink? Is there such a thing as perpetual motion? In this book the young reader is introduced to the exciting world of physics and chemistry. Most of the materials required are simple household substances, and the experiments help the youthful scientist discover for himself the answers to a wide variety of interesting questions.	X	X	Good	Good	Average to Difficult

* Good
** Excellent

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Grade Four

I. The Earth

F. Air

	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Feravolo, Rocco V. 1960 JUNIOR SCIENCE BOOK OF FLYING ** Garrard $2.25 What keeps a plane uo in the air? How does it get off the ground? How cam a pilot find his way through a wall of clouds? These and many more questions are answered by the author in this book. To make things doubly clear, he has included many simple experiments to explain the basic elements of flying.			Good	Good	Easy

* Good
** Excellent

II. Living Things

C. Ecology

	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Adrian. 1955 GRAY SQUIRREL ** Holiday. $2.75 Life cycle of a gray squirrel and its role in conservation simply told and illustrated.				Good	Easy
Barker, Will. 1956 FAMILIAR ANIMALS OF AMERICA ** Harper. $4.95 A well-written, authoritative guide to the subject.	X	X			
Bartlett, Ruth. 1957 INSECT ENGINEERS: THE STORY OF ANTS * William Morrow & Co., Inc. $3.00 The anatomy, social habits, and engineering feats of various kinds of ants.				Average	Average
Colby, Carroll. 1953 WHO LIVES THERE? * Dutton. $1.35 An informative, concise book to aid in identification of animal homes. Illustrations stimulate more careful observation.				Average	Average

* Good
** Excellent

II. Living Things - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Darling, Louis. 1955 SEALS & WALRUSES * Morrow. $2.78 The life and habits of these animals.	X	X		Good	Average to Difficult
Dickinson, Alice. 1953 THE FIRST BOOK OF PLANTS * Franklin Watts, Inc. $2.50 Introduces plant physiology and tells how plants make food, how they reproduce, and how seeds travel.			Average	Average	Difficult
Farb, Peter, and the Editors of Life. 1964 THE FOREST ** Silver Burdett. This is a splendid reference book on forests. The illustrations are excellent.	X	X		Good	Difficult
Green, Ivah. 1950 PARTNERS WITH NATURE * Van Nostrand. $2.00 How animals, plants and people strive to stay alive, how they serve each other, and work together in a wonderful partnership. How children can become partners with nature. A very readable book.	X	X	Good		

* Good
** Excellent

II. Living Things - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Hoke, John. 1956 THE FIRST BOOK OF SNAKES ** Watts. $2.50 Relates the evolution of snakes and early beliefs about them; physical structure, environment, and eating habits are described.	X	X	Good	Good	Average to Difficult
Lauber, Patricia. 1963 JUNIOR SCIENCE BOOK OF PENGUINS ** Garrard. $2.50 Relates the story of penguins' life, habitat, and ecology.	X	X		Good	Easy to Average
Lietz, Gerald S. 1964 JUNIOR SCIENCE BOOK OF BACTERIA ** Garrard. $2.50 A basic introduction to the study of bacteria in the upper elementary grades.		X	Good	Good	Average
Mason, George F. 1955 ANIMAL CLOTHING * Morrow. $2.78 Explains the qualities of different protective coverings.			Average	Average	Average

* Good
** Excellent

II. Living Things - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Mason, George F. 1958 ANIMAL TAILS * Morrow. $2.75 The fascinating story of how animals use their tails.	X			Average	Average
Pope, Clifford H. 1957 REPTILES ROUND THE WORLD * Knopf. $3.79 Excellent book on reptiles that tells all pertinent facts with good organization.	X				
Posell, Elsa. 1958 THE TRUE BOOK OF DESERTS * Children's Press. $2.00 General characteristics of deserts and some of the plants and animals which inhabit them. Many large illustrations and easy-to-read text.		X		Good	Easy
Rosner, Joan. 1959 LET'S GO FOR A NATURE WALK * Putnam. $1.86 Describes an imaginary trip for the purpose of learning about trees, wildflowers, insects and rocks.		X	Good	Good	Average

* Good
** Excellent

II. Living Things - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Selsam, Millicent. 1958 SEE THROUGH THE LAKE ** Harper. $2.92 Exploration of the community of plants and animals that live at different levels in a lake.		X	Good	Good	Average
Shannon, Terry. 1963 ABOUT THE LAND, THE RAIN, AND US ** Melmont. $2.50 An attractive book dealing with the general topic of our relationship with and dependence upon land and water.		X	Good	Good	Easy to Average
Short, Mayo. 1958-59 ANDY AND THE WILD WOOD DUCKS * Melmont. $2.00 Andy misses the wood ducks that came every year and wonders if the increased number of snapping turtles is the cause. He is surprised to learn that he has contributed to the increase in snapping turtles by trapping the skunks that eat their eggs.				Good	Easy
Smith, Frances G. 1954 THE FIRST BOOK OF CONSERVATION * Watts. $2.50 Tells about food chains and other balances in nature which assure that all species will survive. Shows how everyone can help to conserve the natural resources of this country.	X	X			

* Good
** Excellent

II. Living Things - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Swain, Su Zan N. 1955 INSECTS IN THEIR WORLD ** Doubleday. $2.95 A pictorial guide to more than 150 insects; explains how to observe, identify and collect them.	X	X	Good	Good	Average
Teale, Edwin Way. 1953 THE JUNIOR BOOK OF INSECTS. * Dutton. $3.75 Interesting facts about the lives and habits of common insects; instructions for collecting and studying are included. Special interest book.	X	X			Difficult
Zim, Herbert S. 1950 FROGS AND TOADS * Morrow. $2.78 An elementary introduction.		X		Good	Average
Zim, Herbert S. 1952 WHAT'S INSIDE OF PLANTS? ** Morrow. $1.75 A picture book for children and adults. The large type for children, the small type explanation for the teacher. It includes such plants as beans, carrots, corn and tomatoes.	X	X	Good	Good	Easy to Average

* Good
** Excellent

SCIENCE RESOURCE BOOK BIBLIOGRAPHY - Grade 4
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II. Living Things

C. Ecology	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Ellis, Amabel Williams 1959 THE UNKNOWN OCEAN ** Putnam $2.00 This book contains much interesting information about the ocean and the interesting life it contains. From surface travel on an ocean liner, and then on a tiny raft, you proceed with aqualung and fins to dive beneath the surface to gaze at the coral caves and colored kingdom of the fish-world. Finally you submerge in a bathysphere to learn about the secrets of the deep and see underwater mountain ranges similar to those on the moon.	X			Good	Difficult
Epstein, Sam & Beryl 1963 JUNIOR SCIENCE BOOK OF SEASHELLS ** Garrard $2.50 This book tells how to make a shell collection and also offers fascinating information on the creatures that live in seashells.			Good	Good	Easy

* Good
** Excellent

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II. Living Things - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Harmer, Mabel 1964 ABOUT PENGUINS and Other Antarctic Animals * Melmont $2.50 This book introduces you to many of the interesting forms of animal life found in the Antarctic. Some of these include: Adelie penguins, Emperor penguins, seals, Crab-eaters, Weddells, Sea-leopards, and the dangerous killer whales -- also the fierce Skua, who lives on the eggs and young of other birds.	X	X		Good	Average
Morrow, Betty 1958 SEE UP THE MOUNTAIN ** Harpers $2.95 A level-by-level presentation of the varieties in climate, soil, plant and animal life one would find as he advanced from the foothills to the snowy peak of a mountain. Diagrams and attractive illustrations provide excellent helps in understanding the text.				Good	Average
Parker, Bertha M. 1952 THE GOLDEN TREASURY OF NATURAL HISTORY ** Golden Press $4.99 This book is virtually a Golden Treasury with information on plants, animals, the earth, sun and stars, and many fine pictures.	X	X		Good	Average

* Good
** Excellent

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II. Living Things - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Posell, Elsa 1963 THE TRUE BOOK OF WHALES AND OTHER SEA MAMMALS ** Childrens Press $2.00 Informative reading for beginners, concerning the many different kinds of whales and their mammal sea relatives, the dolphin, porpoise, seal, walrus, etc.		X		Good	Easy
Rush, Hanniford 1964 BACKYARD TREES ** Macmillan Co. $2.04 This is an excellent easy reference for identifying trees that are common in the life of all of us.		X		Good	Easy
Selsam, Millicent E. 1961 SEE ALONG THE SHORE ** Harper $2.95 A description of plant and animal life, tides, and other phenomena of the seashore. Attractive drawings.				Good	Average
Selsam, Millicent & Betty Morrow 1955 SEE THROUGH THE SEA ** Harper $2.75 This fascinating introduction of the creatures and plant life that live in the sea will give young readers a sense of ocean depths. Easy reading.	X			Good	Average

* Good
** Excellent

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II. Living Things - C. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Thayer, Peter 1965 THE FLYINGEST ROBIN * Melmont Pub. Co. $2.00 This book is rich in material about changing seasons and the feeding habits and migration of birds. It clearly brings out the relationship of an animal to its environment.				Good	Easy

* Good
** Excellent

II. Living Things

D. Plant and animal economics	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Bruere, Martha Bensley. 1957 YOUR FORESTS * Lippincott. $3.95 The uses of American forests are presented in a highly informative manner.	X				
Fenton, Carroll Lane, and Herminie B. Kitchen. 1959 ANIMALS THAT HELP US * Day. $3.75 Tells of the domestic animals which provide food, clothing, labor, and companionship to man.	X	X			
Green, Ivah. 1950 PARTNERS WITH NATURE * VanNostrand. $2.00 How animals, plants and people strive to stay alive and how they serve each other and work together in a wonderful partnership.	X	X	Good	Average	Average to Difficult
Green, Ivah. 1960 WILDLIFE IN DANGER * Coward-McCann. $3.50 Photographs and brief text describe North American birds and animals which are already extinct or threatened with extinction and what is being done to preserve those still in existence.	X				

* Good
** Excellent

II. Living Things - D. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Louvain, Robert, and the Staff of the Walt Disney Studio. 1958 WHITE WILDERNESS * Golden Press. Animals of the Arctic are portrayed with words and beautiful photographs.	X	X		Average	Difficult
Phillips, Mary Geisler. 1960 DRAGONFLIES AND DAMSELFLIES * Crowell. $2.50 The reader is introduced to the science of taxonomy and to the life cycles and habits of two fascinating insects.	X	X	Good	Good	Average to Difficult
Rounds. 1957 SWAMP LIFE ** Prentice-Hall. $3.00 This attractive presentation of the year-round life of such swamp creatures as raccoons, snakes, turtles, etc. dispels the belief that swamps are gloomy places and makes a strong plea for conservation.		X		Good	Difficult
Russell, Solveig Paulson. 1963 ABOUT NUTS * Melmont. $2.50 A student resource as well as teacher reference that ties in well with work on the seasons and "plant and animal economics".	X			Average	Average

* Good
** Excellent

II. Living Things - D. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Selsam, Millicent E. 1949 PLAY WITH PLANTS ** Morrow. $2.78 Simple experiments which demonstrate some of the properties of plants.	X	X	Good	Good	Average
Selsam, Millicent E. 1956 SEE THROUGH THE FOREST * Harper. $2.92 A good description of the life of the forest, supplemented with attractive illustrations.	X	X			Average
Selsam, Millicent E. 1957 SEE THROUGH THE JUNGLE ** Harper. $2.92 An interesting account of life in the jungles of South America.	X	X			Average
Tibbets, Albert B. 1952 THE FIRST BOOK OF BEES * Watts. $2.50 Deals with anatomy, making and storing honey, the sting, and the organized colony of honeybees.	X	X		Good	Average

* Good
** Excellent

SCIENCE RESOURCE BOOK BIBLIOGRAPHY - Grade 4
(Addendum)

Addition to
Page 22

II. Living Things

D. Plant and animal economics	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Atkin, J. Myron & R. Will Burnett 1961 WORKING WITH ANIMALS ** Holt, Rinehart, Winston $1.50 This is a source booklet of activities about animal life for elementary school teachers. Each activity has been selected to help children in the elementary school arrive at a basic understanding of how animals live and how they behave. The emphasis in this booklet is on activities--science work that children can try out, feel, see, touch.	X				
Lauber, Patricia 1959 OUR FRIEND THE FOREST, A CONSERVATION STORY ** Doubleday $2.00 Easily read text with attractive black and white drawings. Explains interdependence of plants and animals of the forest, describes tree growth and seed dispersal, and discusses importance of forest to man, forest destruction, and forest conservation. Map of forest regions of U. S. is appended.				Average	Average
Mason, George F. 1947 ANIMAL HOMES ** Morrow $2.78 A survey of some of the many unusual homes which animals occupy.				Good	Difficult

* Good
** Excellent

II. Living Things - D. (continued)	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Nasca, Donald & Glenn Sprague 1964 GREEN THUMBS * F. A. Owen Pub. Co. $1.90 Tim and Sally learn about the plant world as they plan and grow vegetable and flower gardens. Common garden plants, seeds, pollination, photosynthesis, and raising of plants are studied.		X	Good	Good	Average
Scheib, Ida 1956 THE FIRST BOOK OF FOOD ** Watts $1.95 Explanations of the sources and processing of food, plus information on the need for food.	X			Good	Average

* Good
** Excellent

III. Energy

E. Magnetic Energy	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Feravolo, Rocco V. 1960 JUNIOR SCIENCE BOOK OF MAGNETS * Garrard. $2.50 This book encourages children to experiment with magnets.			Good	Good	Easy
Kennedy, John M. 1959 MAKING ELECTRICITY WORK ** Crowell. $3.50 Explains principles of electricity and magnetism, and shows child how to build useful devices.	X		Good		
Reuben, Gabriel H. and Archer, Gloria. 1959 WHAT IS A MAGNET? ** Benefic. $1.80 Easily understood material covering the basic ideas of magnetism.		X	Good	Good	Average

* Good
** Excellent

SCIENCE RESOURCE BOOK BIBLIOGRAPHY - Grade 4
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III. Energy

E. Magnetic Energy	Tchr. Ref.	Illus.	Learning Activities	Pupil Interest	Reading Level
Valens, E. G. 1964 MAGNET ** World Pub. Co. $3.00 In this book, written by a well-known science writer and illustrated with brilliant photographs of actual experiments, the reader can explore for himself, step by step, the basic principles of attraction and repulsion, magnetic poles and magnetic lines of force, electromagnetism and finally, even unanswered questions about the great magnetic fields of the earth and space.	X		Good	Good	Average

* Good
** Excellent

Grade Four

BASIC SCIENCE EDUCATION SERIES
Published by Row, Peterson & Co.

(Grade Placed for Major Topic in the Reorganized Science Curriculum)

Introduction to Science

	Reading Level
A. Attitudes (including history)	
The Scientist and His Tools	4.5
B. Tools	
The Scientist and His Tools	4.5
C. Methods	
The Scientist and His Tools	4.5
I. The Earth	
A. History	
Animals of Yesterday	4.5
Stories Read From the Rocks	3.3
B. Physical features	
Stories Read From the Rocks	3.3
C. Rocks and Minerals	
The Earth A Great Storehouse	4.9
Pebbles and Sea Shells	3.0
E. Water	
Water	4.1
Water Appears and Disappears	2.6
F. Air	
The Air About Us	3.5
Our Ocean of Air	4.1
II. Living Things	
C. Ecology	
An Aquarium	2.7
Animals Round the Year	3.3
Animal Travels	3.8
Birds in the Big Woods	2.1

Basic Science Education Series (continued)

	Reading Level
II. Living Things	
C. Ecology	
Plant and Animal Partnerships	3.3
Plants Round the Year	2.8
[illegible]g Our Wildlife	3.3
Seeds and Seed Travels	3.3
D. Plant and animal economics	
The Garden and Its Friends	3.7
Plant Factories	3.9
Useful Plants and Animals	3.2
III. Energy	
E. Magnetic energy	
Magnets	2.7

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10/23/67

BIBLIO. - FILMS

For discussion purposes only

A PARTIAL LISTING OF PRESENTLY OWNED

SCIENCE MOTION PICTURE FILMS

GRADE FOUR

Correlated to the Unit Titles as found in the
Reorganized Science Curriculum

Minneapolis Public Schools
Science Department
2-18-65

For discussion purposes only

Grade Four

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D. Plant and animal economics.................... 27 Green

I. The Earth

A. History...................... 35 Pink
B. Physical features.............. 37 Pink
C. Rocks and minerals............ 41 Pink
D. Soils........................ 44 Pink

III. Energy

E. Magnetic energy................ 45 Yellow

I. The Earth

E. Water........................ 47 Pink
F. Air.......................... 51 Pink

The annotations for films found on the following pages were obtained in most cases from the Library of Congress cards. Some annotations were secured from other sources such as the Educational Film Guide and producers' catalogs.

Introduction to Science

A. Attitudes (including history)

Name and Description of Film	Other Grade Placements	Remarks
1. Audubon and the Birds of America ** Coronet, 1957; 16 min. The life and work of the artist and naturalist, John James Audubon. Depicts the development of his intense interest in painting wildlife, and his efforts to combine this dedication with his business ventures as an adult. Shows scenes of his business and personal life, and of his eventual successful publication of "The Birds of America".	Gr. 7 - **	
2. Health Heroes: The Battle Against Disease ** Coronet, 11 min. Highlights the outstanding contributions of five pioneers in medical science. The discovery of bacteria by Leeuwenhoek; the development of vaccination by Jenner; Pasteur's discovery of the source of bacterial infection and how to destroy germs; isolation and growth of disease germs by Koch; Lister's discovery of disinfection.	Gr. 7 - **	

* Good
** Excellent

II. Living Things

C. Ecology

Name and Description of Film	Other Grade Placements	Remarks
1. Adventures of a Baby Fox * EBF, 1956; 13 min., black & white The film shows many of the forest birds, flowers, insects and animals. It follows a baby fox as it ventures through the woods and near the streams seeking food and adventure. The story of his adventure is told in rhyme.	Gr. 1 - **	
2. Adventures of a Chipmunk Family ** EBF, 1958; 11 min. Shows how chipmunks live, what and how they eat, their enemies and how they deal with them. Views the inside of an actual chipmunk den and follows an exciting chase by the animal's most dangerous enemy. Concludes with the family's preparations for the winter, nest building, food storage, and the digging of escape passages.	Gr. 2 - **	
3. Animal Habitats ** Film Assoc., 1956; 11 min. Presents different kinds of habitats in which animals live and covers the adaptations that animals make to their habitats. Environments explored include the aquatic, the deciduous woods, the prairie, the desert, and coniferous forests at both low levels and in the arctic alpine zones. Some of the modifications and habits of the animals typifying these environments are given as well as the reasons for these variations.	Gr. 7 - ** Gr. 10 - *	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
4. Animal Homes ** Churchill-Wexler, 1960; 11 min., color Shows a variety of animals making and using their homes for shelter, safety, food storage, and raising of young. Includes various birds, ants, a spider, gallfly, mole, gopher, oppossums, and coati.	Gr. 2 - **	
5. Animal Life at Low Tide ** Pat Dowling, 1960; 11 min., color A boy and girl visit the seashore and at a tidepool, find and study many salt water animals and their means of locomotion, protection and getting food. Included are starfish, tube-building sea worms, sea anemone, limpet, sea urchin, snails and the molting of hermit crabs.	Gr. 7 - **	
6. Animals Breathe in Many Ways ** Film Assoc. of Calif., 1963 ; 11 min., color In order to live, animals must breathe. They take in oxygen and get rid of carbon dioxide. Many small animals breathe directly through their body coverings. Most large water-living animals breathe with gills. Adult insects breathe through tubes in the sides of their bodies. Most large land-living animals breathe with lungs.	Gr. 1 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
7. Animals in Autumn ** EBF, 1957; 11 min. Shows typical autumn activities of various animals, including deer, foxes, rabbits, ground squirrels, raccoons, weasels, conies, cold-blooded animals, birds, and insects, as they search for food, build homes, and prepare to migrate or hibernate during the winter months.	Gr. 2 - ** Gr. 7 - *	
8. Animals in Spring ** EBF, 1954; 11 min. Presents the activities of a variety of animals in the spring. Includes scenes which show the turtle emerging from the bottom of the pond to the surface of the water, fish swimming to a shallow creek to spawn, birds building nests, and the luna moth emerging from the cocoon. Shows how different animals protect their young from enemies.	Gr. 2 - **	
9. Animals in Summer ** EBF, 1955; 11 min. Shows more than a dozen common animals of the woods, varying from fish to insects and nest-eaters. The animals are seen seeking food and sheltering their young from enemies.	Gr. 1 - ** Gr. 2 - ** Gr. 5 - ** Gr. 7 - **	
10. Animals in Winter ** EBF, 1950; 11 min. Studies various wild animals as they prepare for and live through the winter season. Portrays a badger, woodchuck, chipmunk, caterpillar, owl, rabbit, bluejay, porcupine, bobcat, and fox in natural settings. Shows that some animals prepare winter homes for themselves, that some store food, that some hibernate, that some change in appearance as winter comes, and that some live through winter in a different form.	Gr. 2 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
11. Animals of Alaska * Northern Films, 1958; 11 min., color Shows views of typical wild animals of Alaska, including the Dall sheep, mountain goat, bear, moose, pika, ground squirrel, hoary marmot, porcupine, red fox, seal, sea lion, walrus, caribou, bison, and musk ox. Includes maps showing the habitat of each.	K. - ** Gr. 5 - **	
12. Animals of the Indian Jungle ** EBF, 1957; 11 min., color Explores the dense tropical rain forest of eastern India, showing closeup views of representative animals in their native environment--the crocodile, tiger, python, cobra, mongoose, monkey, and elephant. Describes and illustrates the pattern of survival in the jungle, pointing out the ways of the hunters and the defenses of the hunted.	Gr. 7 - **	
13. Animals--Ways They Move ** EBF, 1956; 11 min. Close-up, slow-motion, and fast-motion photography is used in showing how animals move in water, on land, and in the air. Explains that an animal's movement helps it to acquire food, to protect itself from enemies, to find a home, to move from place to place.	K. - ** Gr. 7 - **	
14. Aquarium Wonderland ** Pat Dowling, 1960; 10 min., color In microscopic and unusual close-up scenes and animation, one sees how fish breathe, hear, feel, smell and swim. A boy shows how to set up and maintain an aquarium, using the proper amount of water, plants and food for the goldfish and other animal life it contains.	Gr. 1 - ** Gr. 3 - ** Gr. 5 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
15. Arctic Borderlands in Winter ** Coronet, 1948; 11 min. Dramatizes the adaptation of plants and animals to living conditions just south of the Arctic Circle. Records the migrations and color changes of animals preparing for the winter.	Gr. 7 - ** Gr. 10 - *	
16. Autumn on the Farm * EBF, 1948; 11 min., color Activities on the farm and in the neighboring woods in September, October and November. Joan and Jerry pick apples and pumpkins, hunt for nuts, and watch the wild animals and birds. Father prepares silage and Mother picks grapes for jam and jelly.	Gr. 2 - **	
17. Beach and Sea Animals ** EBF, 1931; 10 min., black & white Examines the characteristics, habits and importance of familiar invertebrate animals dwelling on or near the beach. By underwater close-up-photography in their respective environments, reveals the starfish, sea urchin, crab, cuttlefish, octopus, lobster, crayfish, prawn, shrimp, snail, scallop, mussel, and sea cucumber. Illustrates interrelationships, methods of self-protection, and balance in nature.	Gr. 7 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
18. The Beaver ** EBF, 1950; 10 min., color Shows activities of the beaver in its natural environment. Illustrates ways in which the beaver's teeth, feet, and tail help him in swimming, eating, felling trees, and repairing a broken dam. Reveals the unique construction of a beaver house, and stresses the importance of the animal as an agent of conservation and as a valuable fur bearer.	Gr. 2 - ** Gr. 7 - **	
19. Beaver Valley ** Walt Disney, 1953; 32 min., color Pictures the life of a beaver through the cycle of the seasons, showing how he meets his daily needs, builds his house, and conducts his courtship. Filmed around a beaver pond in the West. The other animal, bird, and fish life of the area is also portrayed.	Gr. 5 - ** Gr. 7 - **	
20. Big Animals of Africa ** EBF, 1957; 11 min. Pictures larger animals of Africa, including the zebra, giraffe, wildebeest, lion, elephant, rhinoceros, hippopotamus, ostrich, flamingo, and others, explaining how they live together, and showing examples of protective coloring.		

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
21. Bird Homes * EBF, 1930; 10 min., black & white Shows the beach and marsh homes of the least tern, killdeer, stilt, gull, pied-billed grebe, etc.; the meadow homes of the bobolink, spotted sandpiper, horned lark, and burrowing owl; the skyscraper homes of cormorants, puffins, duck hawks, flickers, etc.; and homes of birds which build near the ground, such as the cuckoo, wood thrush, yellow warbler, redstart, and hummingbird.	K. - ** Gr. 2 - *	
22. Bird Migration ** Heidenkamp, 1949; 10 min., color Presents many kinds of birds and describes the various journeys they make to their summer and winter homes, showing their course of flight and the distance traveled. Examines possible reasons for migration and discusses the "Ice Age" theory of bird migration. Includes bird calls.		
23. Birds Are Interesting ** EBF, 1950; 10 min. Presents some basic biological concepts concerning birds. Provides a systematic analysis of birds by classifying them under three categories--swimming and wading birds, birds of prey, and perching birds. Contrasts such features as bills, feet, and wings to characterize each type. Birds depicted include hawks, owls, ducks, pelicans, canaries, and domestic chickens.	Gr. 5 - ** Gr. 7 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
24. Birds in Winter ** Coronet, 1946; 11 min. Presents the seasonal aspect of bird life, the interdependence of living things, and the food-getting adaptations of birds in winter. Shows how to use a feeding station to attract such winter birds as the chickadee, nuthatch, woodpecker, junco, cardinal, English sparrow, starling, and robin, and how to recognize each.	Gr. 1 - ** Gr. 7 - *	
25. Birds of the Countryside ** Coronet, 1946; 11 min., color A study of six birds, including the indigo bunting, the meadowlark, the nighthawk, the kingbird, and the kildeer. Analyzes their adaptation to environment, their struggle for existence, and their economic importance. Illustrates some of the ways by which they protect themselves.	Gr. 7 - **	Also listed II-D
26. Birds of the Woodlands * Coronet, 1950; 10 min., black & white Shows the life and habits of five native woodland birds; the redstart, purple finch, ovenbird, northern flicker, and the black-billed cuckoo.	Gr. 7 - * Gr. 10 - **	
27. Blooming Desert (Flowering Desert) * Guy D. Haselton Prod., 11 min., color Close-up photographs of wild flowers in the deserts of western United States. Musical score throughout.	K. - * Gr. 3 - * Gr. 7 - **	Needs prep.

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
28. The Bluebird ** Heidenkamp, 1947; 10 min., color The Eastern bluebird; its life and habits. It locates its nest in holes in trees and posts, often in a hole made by a woodpecker. Shows nesting and brood activities, suitable home-made bluebird box, enemies such as starlings. Emphasizes value in eating harmful insects.	Gr. 2 - *	
29. Butterfly Botanists ** Coronet, 1947; 11 min., color Presents the life cycles of the monarch, fritillary, viceroy, wanderer, and other butterflies; includes references to the plants on which they live. For intermediate, junior and senior high school grades.	Gr. 7 - ** Gr. 10 - **	
30. Camouflage in Nature Through Pattern Matching * Coronet, 1945; 8 min., color Pictures the protective markings many animals bear to blend with their variegated surroundings. The animals who carry inconspicuous markings because they need protection for reasons of age, sex, or lack of ability to defend themselves, are contrasted with those who are boldly marked.	Gr. 7 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
31. Chameleon ** Int'l Film Bureau, 1959; 8 min., color The characteristics and habits of the chameleon are depicted in color and with extreme close-ups to demonstrate details of the feet and eyes. The chameleon is seen in its normal habitat, camouflaged against the leaves, moving about the branches. Some remarkable scenes show the color changes of the skin in response to light changes and temperament. The independent action of the eyes is then dealt with, and finally the chameleon is seen catching insects with its elastic tongue, in normal and slow motion.	K. - Gr. 10 - *	No eval. yet
32. The Changing Forest ** McGraw-Hill, 1958; 19 min. Presents the ecology of a deciduous forest area of the type found along the southern fringes of the Laurentian Shield, showing the forest as an integrated community of living things, both plant and animal, balanced by conflict as well as harmony in the never-ending struggle for survival.	Gr. 7 - ** Gr. 10 - **	
33. Fall Brings Changes Churchill-Wexler Films, 1962; 11 min., color This film shows the adaptation of plants and animals to colder weather. Useful in the area of Language Arts. It is beautiful and poetic and will inspire many stories to enrich the child's imagination and vocabulary.	K. - ** Gr. 1 - ** Gr. 2 - ** Gr. 7 - **	No. eval. yet

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
34. Five Colorful Birds * Coronet, 1944; 11 min., color Presents five of America's most colorful birds--the goldfinch, cedar waxwing, yellow-headed blackbird, redheaded woodpecker, and bluebird--in their natural habitat, feeding, nesting, and rearing their young.	Gr. 2 - ** Gr. 7 - *	
35. Fossils: Clues to Prehistoric Times ** Coronet, 1960; 10 min., color The story of fossils (the traces of ancient animals or plants), where they are found, how they were formed, and what they tell us about the development of life on earth is the subject of this study. Museum dioramas, animation, and many fossil specimens are used to explain the work of scientists and their findings.	Gr. 7 - ** Gr. 8 - **	
36. How Plants Help Us * McGraw-Hill, 1960; 12 min., color Illustrates that plants are useful to man in many ways. Shows plants as a source of lumber, paper, rubber, clothing, and food. Shows the parts of a plant which are useful as food, including leaves, stems, roots, seeds, and seed pods, and picture sequences which show how cotton is made into cloth and wheat into bread.	Gr. 2 - **	Also listed II-D

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
37. The Hunter and the Forest * EBF, 1955; 8 min., black & white A nature allegory in which a Swedish hunter stalks and kills a game bird. When spring returns he goes to the forest again. He sights a family of deer, but decides he cannot kill them. Depicts the man's reactions to the changing seasons and natural beauties of the forest.	Gr. 3 - **	
38. Insect Foods ** Pat Dowling, 1960; 14 min., color What insects eat and their feeding habits are of great importance to people. Every plant and animal provides food for some kind of insect. In very close action examples of larval, pupal, adult, or all stages of life are presented as they apply to feeding. Included are katydid, grain beetle, polyphemus moth, termite, flea, preying mantis, antlion and others.	Gr. 5 - ** Gr. 7 - ** Gr. 10 - **	
39. Learning From Pets in the Classroom * Journal Films, 1962; 15 min., color What do children learn by watching and taking care of pets in the classroom? Several schools are visited in this film where children are feeding and taking care of animals, watching them and learning from them. First visit - children are taking care of frogs, toads and salamanders. Next visit is on caterpillars, etc.	Gr. 3 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
40. Life Along the Waterways ** EBF, 1952; 11 min., color Shows the variety of environmental conditions in a changing waterway. Includes scenes of animal and plant life found in streams, ponds, rivers, and marshes.	Gr. 3 - ** Gr. 7 - *	
41. Life in a Garden ** McGraw-Hill, 1960; 13 min., color Shows common forms of animal life found in and near flower gardens. Uses views of flowers, plants, trees, and a water hole to show the environment and habitat, and demonstrates that animals eat and are eaten. Pictures such animals as the snail, slug, chipmunk, salamander, snake, toad, and several kinds of birds and insects, mentioning some interesting or peculiar fact about each.	Gr. 3 - **	
42. Life in a Pond ** Coronet, 1950; 11 min., color Discloses pond life in action, providing examples of important principles of natural science. Shows in microscopic and underwater scenes the variety of self-sustaining plants and animals found in a typical fresh water pond, among them the shoreward, floating, and submerged green plants and water fleas, beetles, insect larvae, dragonfly, nymphs and minnows.	Gr. 5 - ** Gr. 7 - ** Gr. 10 - *	
43. Life in an Aquarium ** Young America, 1950; 11 min., black & white Elementary school children study an aquarium in order to learn how animals breathe and move about under water and how the tadpole develops into a frog.	Gr. 2 - ** Gr. 7 - *	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
44. Life in the Wood Lot ** McGraw-Hill, ; 17 min., color Emphasizes the interrelatedness and interdependence of man, animals, and plants in a woodlot. On a walk through a woodlot surrounded by cultivated farmland a farmer explains the two worlds of the woodlot, the variety of life in the brush, the maintenance of a rigorous balance of living things, and the redistribution of life, death makes possible. Presents close-ups of a variety of the flora and fauna in these woods.	Gr. 7 - **	
45. Little Animals * Pat Dowling, 1959; 11 min., color A variety of small animals beginning with a kitten and carrying through to microscopic animals demonstrate three characteristics of life: Movement, feeling, and eating. The relationship and similarities of the various types of animals in life pattern is brought out. A young boy and girl set the scene for discovering these animals.	Gr. 3 - ** Gr. 5 - *	
46. Live Teddy Bears: The Koala ** EBF, 1947; 11 min., black & white Portrays the life and habits of the koala, a strange animal of Australia. Shows the koala first in a park and then in its native habitat, the Australian bush country, and explains how the koala is adapted to its environment.	Gr. 1 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
47. Microbes and Their Control ** Film Assoc. of Calif., 1963; 16 min., color Microbes are living things too small to be seen with our eyes alone. There are many different kinds of microbes: some are animals and some are plants. Microbes are all around us, and they can be both helpful and harmful to us. In order to grow and multiply, microbes need food, moisture, and warmth. When we want them to grow we give them food, moisture and warmth. To control their growth, we keep these necessities from them.	Gr. 7 - **	
48. Migration of Birds ** EBF, 1960; 11 min., color Shows the yearly cycle in the life of a migrating bird. Discusses known facts and theories about the migration of the Canada goose--when, how, where, and why the birds migrate.	Gr. 2 - ** Gr. 7 - **	
49. Mother Deer and Her Twins ** EBF, 1960; 11 min., color In springtime, the seasons of rebirth and new birth, many baby animals can be found in the forest. Here is the story of twin fawns, Fleet and Shy, from the ages of two days to nearly a year. Children learn how mother deer cares for her babies, how she protects them from danger, and how the fawns learn to care for themselves.	Gr. 2 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
50. Nature's Half Acre ** Walt Disney, 1956; 33 min., color This film shows all of the millions of inhabitants of the tiny grass-roots world in any half acre and how the balance of nature is maintained. Sequences in nest building, feeding the young and the activity during the four seasons of the year are interestingly presented.	Gr. 7 - ** Gr. 10 - *	
51. The Olympic Elk ** Walt Disney, 1951; 27 min., color A photographic study of the Olympic elk which abound on the Olympic Peninsula in the State of Washington. Describes the life of the herd in the winter quarters in the low country called the rain forest, the trek to the summer feeding ground in the high country, and the placid summer existence of the herd, which culminates in the September mating seasons. Shows attempts of the bulls to assemble harems and the resulting battles between the males.	Gr. 2 - ** Gr. 7 - **	
52. Partnerships Among Plants and Animals * Coronet, 1960; 10 min., color Uses a variety of examples to show the interdependence of plant groups, animal groups, and plant-animal groups. Examples illustrated include ants and aphids, hermit crab and bryozoans, algae and fungi in lichens, red clover and nitrogen producing bacteria, and red clover and the bumble bee.	Gr. 7 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
53. Plant Survival ** United World, 1936; 10 min., black & white Self-protective devices used in various stages of plant growth; defenses of flowers and leaves against damage by rain and animals; and in close-up-views, the protective devices of roots, seeds, buds, leaves, and flowers.	Gr. 7 - ** Gr. 10 - *	
54. Plant Traps ** EBF, 1931; 10 min., black & white Examines the characteristics of two representative carnivorous plants revealing how they entrap and digest insects as part of their food. Close-up photography depicts the pitcher plant catching and drowning its prey, and the sun dew plant as its leaf tentacles enfold insects. Includes microscopic and time-lapse photography.	Gr. 7 - ** Gr. 10 - **	
55. The Pond ** Tabletopper Prod., 1956; 8½ min., color A photographic record of a pond from sunrise to nightfall, revealing the many and subtle changes in light, color, shadows, and patterns as the day advances. Ducks paddling in the pond and the plants that grow in and around the pond are also shown.	Gr. 7 - **	Adv. vocab.
56. Prowlers of the Everglades ** Walt Disney, 1961; 32 min., color Presents the life of the alligator, otters, and birds in the swamps of the Florida Everglades.	Gr. 7 - ** Gr. 10 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
57. Reptiles and Their Characteristics ** Coronet, 1959; 11 min. Identifies the five orders of animals that make up the reptile group and points out their common characteristics and some of their differences. Pictures snakes, lizards, turtles, crocodilians, and the rare tuatara in their native habitats; explains how they live and reproduce, their adaptations to their environments, and some of the ways in which they benefit mankind.	Gr. 5 - ** Gr. 7 - **	
58. Seal Island ** Walt Disney, 1953; 18 min., color A study of the fur-bearing Alaskan seals during the mating season when the seals return to the barren place of their own birth to breed. The bulls arrive early in May, select sites for their summer homes where they await the arrival of the females. The young males spar like prizefighters, training to challenge a beachmaster and take possession of his harem. Near tragedy develops when a baby seal loses his mother, but she finds him among the island's more than 100,000 inhabitants despite his apparent resemblance to all the other pups. Filmed on one of the Pribilof Islands in the Bering Sea.	Gr. 5 - **	
59. Seashore Life ** EBF, 1950; 11 min., color Shows how representative animals found on the sandy beach, the rocky beach, and the mud flat are adapted to their environments. Explains how they feed, move, and compete with other kinds of animal life.	Gr. 7 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
60. Seasonal Changes in Plants ** McGraw-Hill, 1960; 11 min., color Illustrates and explains the various changes that take place in a plant through the cycle of the seasons, using typical examples of annuals, biennials, and perennials.	Gr. 7 - **	
61. Seasonal Changes in Trees ** Coronet, 1949; 11 min., black & white Children study the common trees near their school and note the seasonal changes which occur in the different varieties.	Gr. 1 - ** Gr. 3 - ** Gr. 7 - **	
62. Seed Dispersal ** EBF, 1931; 11 min., black & white Considers various means by which seeds are disseminated; how they anchor themselves to the ground to facilitate germination; and how they protect themselves. Demonstrates the dispersal of seed plants by wind, transportation by animals, and propulsion from seed cases. Describes anchoring methods by clamping, hooking, adhesion, and corkscrew motion. Portrays various natural devices for protection while sprouting.	Gr. 5 - ** Gr. 7 - ** Gr. 10 - *	
63. Spring Brings Changes ** Churchill-Wexler, 1962; 11 min., color In spring, when the sun warms the earth, the world comes alive. Farmers plow their fields and Faith and Mark plant a vegetable garden. Beautiful nature photography compresses in time a wealth of changes in plants and animals, changes that occur so gradually that they are difficult for the child to grasp.	K. - ** Gr. 2 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
64. Spring Comes to the Subarctic (Canada's Churchill Region) ** U of M, 1955; 15 min., color Shows plant and animal life in the subarctic and portrays the changes which occur as spring comes to the northern region of Canada. Includes detailed scenes of native plants, and close-ups of birds of the area.	Gr. 7 - ** Gr. 10 - **	
65. Spring on the Farm * EBF. 1947; 11 min., color Joan and Jerry watch the developments that take place in plant and animal life as spring returns to the farm.	K. - **	
66. Summer is an Adventure * Coronet, 1957; 11 min. Two young children learn that summer is a time for being outdoors--playing at the beach, catching fireflies, and picnicking--for seeing colorful flowers, plants, birds, and insects, for walking in the woods, and for enjoying long, warm, and bright days.	Gr. 3 - **	
67. The Tree ** Dimension Films, 1963; 10 min., color Describes the beauty of trees and their importance to birds, insects, other plants, animals, and people. Introduces the concept that living things depend on each other.	Gr. 1 - ** Gr. 3 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
68. This Vital Earth * EBF, 1948; 11 min., color Shows the interdependence of plant and animal life and the consequences of man's misuse of natural resources. Includes animated drawings.	Gr. 7 - ** Gr. 10 - **	Also listed II-D For mature children
69. Toads ** Pat Dowling, 1957; 10 min., color A description of the life and habits of the toad, an animal that lives partly in the water and partly on land, and is one of the oldest known amphibians. Hatched in shallow water, the animal develops lungs and legs before he can be a land animal. It eats all types of insects, catching them by its long sticky tongue. Toads are the natural prey of snakes.	Gr. 5 - ** Gr. 7 - **	
70. Vacant Lot Int'l Film Bureau, 1962; 21 min., color The relationships of wild flowers and common weeds, plant-eating insects and their predators, amphibians, reptiles, song birds and mammals are studied as they contribute to the dramatic balance of nature. The ecology of the vacant lot is treated broadly so that essential ecological principles may easily be related to similar areas in other regions, including urban areas.	Gr. 4 - Gr. 7 - Gr. 10 -	No eval. yet No eval. yet No eval. yet

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
71. Water Birds ** Walt Disney, 1957; 32 min., color A picture of rare beauty, alive with excitement and rare glimpses into the behavior of seaside and marshland feathered creatures--climaxed by a striking musical bird ballet of the air.	Gr. 5 - ** Gr. 7 - ** Gr. 10 - **	
72. We Get Food From Plants and Animals ** McGraw-Hill, 1960; 11 min., color During a visit to a grocery store, two boys acquire a wealth of information about the sources from which their food is obtained, and the interdependency of plants and animals in our world.		
73. What Plants Need for Growth * EBF, 1960; 10 min., color Uses time-lapse photography to indicate by means of simple demonstrations the factors required for plant growth, including water, light, minerals, air and warmth. Time-lapse photography is used to compare plant growth under favorable and unfavorable conditions.	K. - ** Gr. 2 - **	
74. What's Alive ** Film Assoc. of Calif., 1962; 10 min., color Helps the student toward an understanding of the activities that distinguish living from non-living things. Defines living things in terms of a set of activities. This print shows that only a thing that can move, respond, change fuel into energy, reproduce and grow can be said to be "alive".	Gr. 3 - ** Gr. 5 - ** Gr. 7 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
75. What's Under the Ocean ** Film Assoc. of Calif., 1959; 13 min., color Scientists study the ocean in many ways. Some take cameras to study plants and animals in shallow depths. Some go to the deepest ocean floor in special craft-like abathyscaph. Some use instruments on research ships to study bottom materials and to map vast areas of the ocean floor. They have found a long mountain range dividing the Atlantic in two and in the Pacific, thousands of volcanoes and many deep trenches.	Gr. 7 - ** Gr. 8 - **	
76. Winter on the Farm ** EBF, 1948; 11 min., color Shows how Joan and Jerry spend the winter months on the farm.	K. - **	
77. Wonders in a Country Stream ** Churchill-Wexler, 1949; 11 min., color Several inhabitants of a mountain stream and their life habits. Two children explore the stream and discover a baby snapping turtle, a baby frog, a salamander, a caddis-fly, a damsel fly, and other common animals.	Gr. 3 - **	
78. Wonders in the Desert ** Churchill-Wexler, 1960; 10 min., color Joan and Jimmy, elementary grade pupils, discover many forms of animal life existing in the desert. During a walk they see jack rabbits and burros, and examine closely an ordinary lizard, a horned toad, a chuckwalla, a desert tortoise, and a pocket mouse. The narrator points out how these animals gain protection and adapt themselves to desert life.	K. - ** Gr. 2 - **	

* Good
** Excellent

Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
79. Wonders in Your Own Backyard ** Churchill-Wexler, 1949; 10 min., color A boy and a girl find in their urban backyard an earthworm, a millepede, a sow bug, a pillbug, a house spider and a snail. Close-up views show details as to how they move and eat.	K. - ** Gr. 2 - **	
80. World in a Marsh ** McGraw-Hill, 1959; 22 min., color Examines the strange floating world of the marsh. Probes into the life forms that dwell beneath the water's surface, and watches the creatures that choose the cool green jungle of weeds and swamp lilies for their habitat.	Gr. 7 - ** Gr. 10 - **	

* Good
** Excellent

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

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XI. Living Things

C. Ecology

Name and Description of Film	Other Grade Placements	Remarks
Beach - A River of Sand EBF, 1965, 20 min., color Discusses the oceanographic wonder -- where does sand come from? Where does sand go? Analyzes currents produced by waves. Calculates accumulation and depletion of sand produced by jetties. Shows that most of the movement of sand is along the shore; thus the beach is a moving river of sand existing between the land on one side and the breaking waves on the other.	Gr. 8 -	No eval. yet No eval. yet
Bear Country ** Walt Disney, 1956, 30 min., color No animal has excited more human curiosity, laughter and respect than the North American black bear. Disney cameras present a remarkable photographic coverage of this giant of the Rocky Mountain region.	Gr. 5 - ** Gr. 7 - **	
Camouflage in Nature (2nd edition) * Coronet, 1963, 22 min., color Reveals how camouflage protects animals, birds and fish from their natural enemies. Shows contrast between those animals who are boldly marked and those who carry inconspicuous markings because they need protection for reasons of sex, age or lack of ability to defend themselves. Illustrates color matching and pattern matching as camoflage techniques.	Gr. 7 - **	

* Good
** Excellent
4-28-67

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
Conserving Our Water Resources Today * Coronet, 1962, 11 min., color Presents the importance of water resources. Depicts the increased water needs. Shows ways to conserve water -- conserving ground water, holding surface water, purifying and reusing water and salt water conversion.	Gr. 7 - **	
Erosion - Leveling the Land EBF (Earth Science Series) 1965, 14 min., color Investigates the processes of weathering, erosion, and deposition of rock materials. Shows that the constant movement of these materials from high places toward the seas levels the land. Points up some questions about why the surface of the earth has not been leveled completely.	Gr. 8 - **	No eval. yet
Exploring the Ocean ** Churchill-Wexler, 1960, 11 min., color Pictures the ocean's floor, slopes and continental shelves. Investigates plants and animals, and explains how all life in the ocean depends on the tiniest forms of plant life. Describes the ocean's vast storehouse of minerals and describes the part played by the water cycle in depositing these minerals.	Gr. 8 -	No eval. yet
Food Cycle and Food Chains Coronet, 1965, 11 min., color Illustrates examples of food chains, almost all of which depend ultimately on green plants. Relates food chains to the oxygen, carbon dioxide and nitrogen cycles. Describes the food cycle as the unending pattern of life, growth and decay.	Gr. 5 -	No eval. yet No eval. yet

* Good
** Excellent
4-28-67

SCIENCE MOTION PICTURE FILMS - Grade Four
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II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
Insects in the Garden EBF (Basic Life Science) 1965, 11 min., color Examines the role of insects in the world of living things. Observes, as an example, the insects on a rosebush -- aphids, ants, a green lacewing, and a ladybird beetle. Illustrates important stages in the life cycles of several insects. Shows how insects depend on each other and on plants for survival.	Gr. 2 - **	No eval. yet
Life Between the Tides ** EBF (Basic Life Science) 1964, 11 min., color Presents a motion picture discovery of intertidal life, showing the rich variety of animals and plants on a stretch of shoreline on the coast of the state of Washington. Points out the relationships among plants and animals and their marine environment.		
Life in the Ocean ** Film Associates of Calif., 1963, 16 min., color This film presents an overview of the plants and animals of the sea. The relationships of marine forms to each other, to their environment, and to similar living things found on land is emphasized. Plants and animals of shore, shallow water, and ocean depths are examined in some detail.	Gr. 7 - ** Gr. 8 -	No eval. yet
Life on the Tundra ** EBF (Basic Life Science) 1963, 14 min., color Presents the characteristics of the Canadian tundra. Shows the problems of plant and animal survival in this harsh, remote environment. Describes the summer months, with nearly twenty hours of sunshine each day. Shows how the sun provides warmth which softens the permafrost and releases moisture for plant growth, which in turn provides food for the animal life.		

* Good
** Excellent
4-28-67

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
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II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
Life Story of the Hummingbird **		
EBF (Basic Life Science) 1964, 16 min., color	Gr. 5 - ** Gr. 7 - **	
An unusual combination of slow-motion and high speed photography, with many extreme closeups, makes it possible to observe aspects of the hummingbird's behavior which have never been so clearly recorded on film before: the wingbeats (more than 60 in a second), the spectacular high dives and gymnastics of the male during courtship; the nest building artistry of the female; the hatching of the chicks; and the mother's techniques for feeding her young and encouraging them to fly.		
Life Story of the Oyster **		
EBF (Basic Life Science) 1964, 11 min., color		
Presents a study of the life functions of the oyster, of a group called the phylum mollusca. Relates that oysters can be found throughout the world, chiefly in shallow waters of quiet bays and inlets, never moving during their adult life. Describes their physical characteristics and reproductive processes and behavior patterns.		
Life Story of the Paramecium **		
EBF (Basic Life Science) 1964, 11 min., color	Gr. 7 - **	
Remarkable microphotography provides a unique live-action study of the paramecium in its natural environment, showing life functions such as locomotion, feeding, digestion, excretion, and reproduction.		

* Good
** Excellent
4-28-67

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
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II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
Life Story of the Red-Winged Blackbird ** EBF (Basic Life Science) 1964, 11 min., color Excellent natural photography makes possible close observation of many fascinating activities in the life of the familiar red-winged blackbird: the migratory flight, the courtship ritual, nest building, defense of the nesting site against enemies, the hatching of the young birds.		
Life Story of the Sea Star ** EBF (Basic Life Science) 1964, 11 min., color The film offers unusual close-ups of the sea star's physical development and activities--the action of its tube feet, the delicate maneuvers by which it rights itself when it is turned over, the way it captures and digests its prey, and the highlights of embryonic development from the earliest larval stage to adulthood. The film also includes live photography of the rare sea lily and the basket star.	Gr. 5 - Gr. 7 - **	No eval. yet
Life Story of the Snail EBF (Basic Life Science) 1964, 10 min., color A typical fresh water snail is photographed in an aquarium which simulates the animal's natural habitat. Close-up shots reveal details of physical structure and characteristic modes of behavior, such as feeding and locomotion. A model of a snail is used to indicate the location of the various body organs and structures. Thought questions are posed at several points during the narration to encourage students to apply and interpret important concepts presented in the film.	Gr. 5 - ** Gr. 7 - **	No eval. yet

* Good
** Excellent
4-28-67

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
Page 26

XI. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
Life Story of A Snake **		
EBF (Basic Life Science) 1964, 11 min., color		
Presents a study of the snake. Examines the physical characteristics, the life cycle, and behavior of the North American blacksnake. Illustrates ways in which a cold-blooded animal adapts itself to changing conditions in its environment.		
Life Story of the Toad **		
EBF (Basic Life Science) 1964, 10 min., color	Gr. 5 - ** Gr. 7 - **	
Examines the physical characteristics and life cycle of the toad, a typical amphibian. Shows how it is adapted to living in water as well as on land. Describes the locomotion, feeding habits, courtship, reproduction, and special means of protection against enemies.		
Mammals of the Western Plains *		
Coronet, 1947, 11 min., color		
Through the example of the plant-eaters and meat eaters of the plains, illustrates the inter-relationship of the wildlife in an area. Discloses, through scenes in their natural habitat, how the buffalo, antelope, timber wolf, and others are fitted to find their food and to protect themselves.		

* Good
** Excellent
4-28-67

II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
Microscopic Wonders In Water ** Pat Dowling Pictures, 1960, 10 min., color Pictures microscopic life forms in pond water and explains the distinguishing characteristics of the amoeba, vorticella, stentor, urocentrum, hydra, and rotifer. Shows their modes of propulsion and ways of capturing food, and tells of their reproductive processes. Demonstrates how to slow up animal action for close observation, and how to focus the microscope. Compares the life of microscopic animals in water to other animals in forest, and mountain country.	Gr. 10 - Biology **	
Mysteries of the Deep Walt Disney, 1961, 24 min., color Presents glimpses of the mysterious life below the surface of the sea. Pictures animals that live at different levels of the sea, especially those animals that live on the rocky reefs at the bottom. Depicts plumed sea slugs being eaten whole by the giant slug, navanax; predatory fish having their scales cleaned by French Angel and Barbershop Shrimp; ballet of the Squirrel Fish at mating time; Grunt's kissing ritual; miracle of birth of the dolphins, sea horse and octopus. Emphasizes the struggle for survival of the creatures that inhabit the reefs.	Gr. 7 - ** Gr. 8 -	No eval. yet No eval. yet

* Good
** Excellent
4-28-67

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

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II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
The Pond IFB, 1962, 22 min., color Examines a community of living things in the environment of a pond and shows how each living organism above and below the water is related to a light, mineral water requirement. Uses close-ups and on-the-spot recorded sound to survey the wild-flowers and plants which provide food and shelter for an abundant animal life of invertebrates, fish, amphibians, reptiles, birds, and mammals. Stresses that the pond influences much of the countryside and that there is a slow process of evolution and adaptation which is sheltered and protected in the environment of the pond.	 Gr. 7 -	No eval. yet No eval. yet
The Restless Sea (Part I and II) ** Bell Telephone Co., 1963, 60 min., color Presents a wide-ranging report on the vast and mysterious "inner space" that covers nearly three quarters of the earth's surface -- the sea. Illustrates in animated and filmed sequences the work of oceanographers in searching out the complex and interwoven relationships of nature in the sea. Shows hurricanes and mountainous waves; marine life from microscopic plankton to the largest mammals; movements of tides and currents; composition of sea water; topography of the ocean floor, with its great seamounts, sunken islands and submarine canyons and trenches. The only "character" that appears is a cartooned drop of water, who helps to explain the various phenomena.	Gr. 7 - Gr. 8 - Biology - Sci. 1	No eval. yet No eval. yet No eval. yet No eval. yet

* Good
** Excellent
4-28-67

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
Page 26

II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
The Vanishing Prairie, Part 1 ** (Pioneers, Indians and the Buffalo) Walt Disney, 1962, 26 min., color Describes the area that once was the American prairie, lying between the Mississippi River and the Rocky Mountains. Depicts how the pioneers traversed this trackless area in prairie schooners using trails and natural landmarks to guide them. Shows how the Indian lived in harmony with the wild life of the region until the white man came. Presents the buffalo as the symbol of the vanishing prairie. Shows the birth of a buffalo calf and follows the herd in its search for grass and water. Depicts life within the buffalo herd--a battle between bulls, a storm-caused stampede, fire and flood.	Gr. 7 -	No eval. yet
The Vanishing Prairie, Part II (Animals of the Prairie) Walt Disney, 1962, 27 min., color Describes the habitat and ecology of many small animals native to the prairie. Depicts the prairie dog and his adaptations to underground life in colonies. Shows the activities of hunting animals like the ferret and the rattlesnake; and the defensive precautions of prairie dog and pocket gopher. Presents several species of large animals that once roamed the plain but are now found in the foothills of the Rocky Mountains--the prong-horn antelope, the big horn sheep, the mountain lion and deer. Shows how these animals have adapted to a new environment.		No eval. yet

* Good
** Excellent
4-28-67

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
Page 26

II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
White Wilderness - Part I (The Arctic Region and its Polar Bears) Walt Disney; 1958, 28 min., color Presents the arctic region and the animals that live there. Describes the glaciers that lie in the valleys of this wilderness. Shows that walrus inhabit the area during the summer months. Depicts that the king of the arctic is the polar bear. Shows how the polar bears live; the babies are born during hibernation. Relates that the polar bear is the mortal enemy of the walrus tribe.	Gr. 7 -	No eval. yet No eval. yet
White Wilderness - Part II ** (The Lemmings and Arctic Bird Life) Walt Disney; 1958, 21 min., color Presents the arctic region and the animals and birds that live there. Shows the lemming, a small rodent. Relates how they appear, looking for food, before the snow leaves. Describes their mass migration to the sea. Shows some of the interesting waterfowl of the region--elder ducks, turnstones, phalaropes, arctic gulls, loons, golden eye ducks. Explains how polar bears and ermine look for food in the waterfowl sanctuaries.	Gr. 7 -	No eval.yet
White Wilderness - Part III ** (Large Animals of the Arctic) Walt Disney; 1958, 21 min., color Presents the large animals that inhabit the arctic tundra. Describes the musk ox. Relates that the musk ox are herd animals by habit and react to danger by rushing to a central place, grouping themselves in a circle with the bulls along the outer edge. Shows the wolves, the caribou, the reindeer, the wolverine. Depicts the cunning and ferociousness of the wolverine.	Gr. 7 -	No eval. ye

* Good
** Excellent
5-9-67

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
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II. Living Things - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
Wild River ** EDH, 1965, 15 min., color Presents the need for conservation. Stimulates a desire in young Americans to preserve their heritage of nature. Shows the importance of the work done by wildlife conservationists. Discusses how the destruction comes about, why it is permitted, who is responsible for the damage and how it can be controlled. Shows beautiful wildlife scenes.		
Yosemite: Its Geology, History and Beauty BAI, 1965, 18 min., color Presents a study of Yosemite Park. Shows many different rock formations that depict how the area was formed from glaciers. Describes the natural beauty of the park. Discusses respect for our parks and ways we can help keep them free from litter.	Gr. 8 -	No eval. yet No eval. yet

* Good
** Excellent
4-28-67

II. Living Things

D. Plant and animal economics

Name and Description of Film	Other Grade Placements	Remarks
1. Animals Useful to Man ** EBF, 1960; 11 min., color Traces the contributions that animals have made to man's welfare from primitive times to the present day. Explains that animals are valuable as a source of food and raw materials for many products, that in many regions of the world the muscle-power of animals is almost indispensable, that doctors and scientists find ever-increasing uses for animals in research, and that animal pets are good companions.	Gr. 7 - **	
2. Apples, From Seedling to Market ** EBF, 1950; 11 min., color Uses the "Delicious" apple as an example to trace the major steps of apple growing and packing, from planting and grafting stages through shipment of the packaged fruit. Filmed in the Wenatchee Valley in Washington.	Gr. 2 - ** Gr. 7 - **	
3. Basic Fibers in Cloth * Coronet, 1948; 11 min. Through the use of the microscope, compares fibers and filaments for strength, length, absorptive power, elasticity, heat conductivity, cleanliness, and washability. Points out the relationship between these characteristics and each home use of cloth.		

* Good
** Excellent

Living Things - D. (continued)

Name and Description of Film	Other Grade Placements	Remarks
4. Birds of the Countryside ** Coronet, 1946; 11 min., color A study of six birds, including the indigo bunting, the meadowlark, the nighthawk, the kingbird, and the kildeer. Analyzes their adaptation to environment, their struggle for existence, and their economic importance. Illustrates some of the ways by which they protect themselves.	Gr. 7 - **	Also listed II-C
5. Corn Farmer * EBF, 1939; 11 min., black & white Describes the work of a farmer in planting, cultivating, and harvesting his corn crops. Presents problems of crop rotation, haying, hog and cattle raising, and marketing. Contrasts uses of machinery in modern farming with hand methods. Depicts scenes of typical home activities, a trip to town, and a livestock auction.		
6. Cotton in Today's World ** Coronet, 1962; 11 min., color Through scenes filmed in Egypt, India, Mexico, Indonesia and England, this film presents a brief historical background of the growing of cotton and indicates its important place in the economy of the world today. Modern American methods of growing, spraying, picking and ginning cotton are shown, as well as some of the finished products.		

* Good
** Excellent

Living Things - D. (continued)

Name and Description of Film	Other Grade Placements	Remarks
7. Farm Animals ** EBF, 1957; 11 min., color Shows cows being milked by machine, sheep being sheared, and a farmer's young son taking care of newborn kittens, a calf, and chicks. Explains the characteristics and habits of farm animals and identifies products obtained from them.	K. - ** Gr. 2 - **	Easy film
8. Farmyard Babies ** Coronet, 1952; 11 min. First and second grade teachers use posters and models of farm buildings as an introduction to a study of farm life. Pictures of a farm in spring show a variety of young animals and portray their characteristics, habits and eventual usefulness to the farmer.	K. - ** Gr. 2 - **	
9. Food From Our Garden ** EBF, 1952; 10 min., color Shows the members of a family working in their garden. Describes the structure and growth of plants; examines the plants of several common vegetables, pointing out in each the location of the edible portion and its function in the growth of the plant.	Gr. 1 - ** Gr. 2 - ** Gr. 7 - **	
10. Forests and Conservation ** Coronet, 1943; 11 min. Shows how the Government and a lumber camp joined forces to save trees through a program of selective logging, reforestation, and fire prevention. Includes a fire-fighting sequence.	Gr. 7 - **	

* Good
** Excellent

Living Things - D. (continued)

Name and Description of Film	Other Grade Placements	Remarks
11. How Animals Help Us ** McGraw-Hill, 1960; 11 min., color Illustrates how animals help man to secure the necessities of life, including food, clothing and labor in producing other things. Pictures various helpful animals on a farm, including cows, horses, turkeys, chickens, minks, and a dog, and tells of the ways in which they are helpful to man. Uses the theme of a boy who tries to find a useful job on the farm for a kitten which he wants to keep as a pet.	Gr. 3 - **	
12. How Plants Help Us ** McGraw-Hill, 1960; 12 min., color Illustrates that plants are useful to man in many ways. Shows plants as a source of lumber, paper, rubber, clothing, and food. Shows the parts of a plant which are useful as food, including leaves, stems, roots, seeds and seed pods, and picture sequences show how cotton is made into cloth and wheat into bread.		Also listed II-C
13. Insects ** EBF, 1953; 10 min., color Enumerates characteristics of insects. Shows reproductive and growth processes, structural characteristics, and eating habits typical of each of the five classes within the insect world.	Gr. 7 - ** Gr. 10 - **	

* Good
** Excellent

Living Things - D. (continued)

Name and Description of Film	Other Grade Placements	Remarks
14. The Ladybird Story * Pat Dowling, 1957; 10 min., color An explanation of how the Cottony Cushion Scale, an insect that attacks such trees as apple, peach, Walnut, orange, lemon, and grapefruit, was brought under control in the United States by importation of its natural enemy, the Ladybird Beetle. Study of the scale in its native Australia revealed how the Ladybird Beetle was its natural enemy. Importation and control followed.	Gr. 7 - * Gr. 10 - *	
15. Lumber For Houses * EBF, 1952; 12 min. The story of lumber from trees to sawmill. Shows logging crews at work, principally in forests of the Northwest, cutting down trees with a chain saw, sawing the trees into logs, transporting the logs to a mill where the logs are debarked, trimmed and cut into boards before being sent to a planing mill.	Gr. 7 - *	
16. Our Foster Mother, The Cow ** Frith, 1943; 11 min., color Portrays the happenings on a dairy farm. Emphasizes the importance of milk, and the service of cows to mankind.	Gr. 3 - *	
17. Paper Making ** Coronet, 1941; 21 min., black & white Explains how paper is made, from the first step of cutting the spruce to the finished rolls of paper, describing the many mechanical and chemical steps involved in the process.	Gr. 7 - *	

* Good
** Excellent

Living Things - D. (continued)

Name and Description of Film	Other Grade Placements	Remarks
18. Planting Our Garden **	Gr. 5 - *	

EBF, 1952; 11 min., color

Follows a family's work on their garden from the early indoor planting of such vegetables as tomatoes, cabbages and broccoli, through the preparation of the garden plot, to the final transplanting of seedlings, the planting of potatoes, and the sowing of seeds of other vegetables. Shows how the children learn the requirements of healthy plant growth.

Name and Description of Film	Other Grade Placements	Remarks
19. Plants Make Food **	Gr. 5 - **	

Churchill-Wexler, 1959; 11 min., color

Two children learn something of the process by which plants make food (photosynthesis); the functioning of roots, stems and leaves; the transforming of water, minerals and carbon dioxide into foods; the role of chlorophyll and sunlight.

20. Pride, the Saddle Horse **

EBF, 1952; 10 min., black & white

Illustrates various roles of the horse in modern life, and traces the development and training of a colt until he becomes a saddle horse at three years of age. Depicts stages of a colt's growth, early life with mother, weaning, first shoeing, training for stance, breaking to the saddle, learning the gaits, and performing at a horse show.

* Good
** Excellent

Living Things - D. (continued)

Name and Description of Film	Other Grade Placements	Remarks
21. Silk Makers of Japan ** Bailey Films, 1961; 16 min., color Shows how the life of a segment of the Japanese population depends upon the culture of silkworms, and the manufacture of products derived from them. Through live-action, close-up photography the silkworm is photographed in all stages of its life history. Its effect upon the Japanese is illustrated through a portrayal of the work of one farm family as the family goes about caring for the needs of the silkworm.		
22. Story of Bananas ** Int'l Film Bureau, 1947; 11 min., black & white Shows how bananas are grown, harvested, and transported.		
23. The Story of Potatoes ** EBF, 1952; 12 min. Explains the growth of the potato industry in the United States. Describes the planting, cultivation, harvesting, and marketing of the potato in a western state.		
24. This Vital Earth * EBF, 1948; 11 min., color Shows the interdependence of plant and animal life and the consequences of man's misuse of natural resources. Includes animated drawings.	Gr. 4 - Gr. 7 - ** Gr. 10 - **	For mature children Also listed 11-C

* Good
** Excellent

Living Things - D. (continued)

Name and Description of Film	Other Grade Placements	Remarks
25. Trees: Our Plant Giants ** Academy Films, 1960; 14 min. Uses animated diagrams to show how a tree grows and to show the various layers in a cross-section of a tree. Pictures the many uses of trees in industry. Illustrates use of trees as soil conservers, and as homes for birds.	Gr. 5 - **	
26. What is Cloth? * Coronet, 1948; 11 min. A mother explains to her daughter some facts about fibers, yarns, and weaves. With the aid of enlarged photography shows the scientific basis for firmness of weave, durability, luster, heat conductivity, cleanliness and washability.		
27. Working Water ** Pat Dowling, 1957; 14 min., color Shows how running water can be harnessed by dams and used for irrigation of arid areas. Explains the importance of an adequate water supply, sunshine, and good soil for the growing of healthy crops. The channeling of water to the farm land, and the ways in which it is controlled and distributed by the irrigation farmer are also shown.	Gr. 7 - ** Gr. 10 - **	

* Good
** Excellent

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
Page 34

II. Living Things

D. Plant and animal economics

Name and Description of Film	Other Grade Placements	Remarks
Green Gold - Bananas ** IFB; 1964; 11 min., color Presents the specialized steps in the growing of bananas. Shows the jungle ground being cleared and planted with the root stock. Follows the rapid growth of the banana plant to its maturity in about eleven month's time and the precautions needed to keep the plant healthy. Shows the harvest of the bananas and the transportation of the fruit to ships on the way to market around the world.		

* Good
** Excellent
5-9-67

I. The Earth

A. History

Name and Description of Film	Other Grade Placements	Remarks
1. The Dinosaur Age ** Film Assoc. of Calif., 1958; 14½ min., color This film introduces its audience to the work of paleontologists in reconstructing the past. It illustrates the methods used in locating, uncovering and transporting fossil remains to a museum. Classes will see and understand how man has learned about the past life on earth.		
2. World Is Born ** Walt Disney, 1957; 20 min., color This film in color gives the biography of the first two billion years of our planet, Earth, showing the birth of the earth and the first living creatures. The following sequences are presented: Birth of the Earth and First Life; Survival of the Fittest; End of the Dinosaurs.	Gr. 8 - *	
3. Prehistoric Animals of the Tar Pits ** Film Assoc. of Calif., 1957; 14 min., color The film introduces the tar pit animals and the skeletons of some of the animals taken from the pits. It illustrates the methods used by paleontologists in identifying and assembling fossil materials and how we learn about life in prehistoric times.		

* Good
** Excellent

The Earth - A. (continued)

Name and Description of Film	Other Grade Placements	Remarks
4. Rocks That Reveal the Past ** Film Assoc. of Calif., ; 12 min., color Layered, or sedimentary, rocks often contain fossils: the remains of animals and plants that were alive when the rocks were formed. Fossils enable scientists to reconstruct the life of the past. The sedimentary rocks in which fossils are found help scientists to learn about the sequence in which living things appeared on earth. The layered rocks of the Grand Canyon provide us with fossil evidence of a billion years of earth history.		Also listed I-C

* Good
** Excellent

I. The Earth

B. Physical features

Name and Description of Film	Other Grade Placements	Remarks
1. Birth and Death of Mountains ** Film Assoc. of Calif., 1961; 12 min., color Mountains seem permanent and unchanging. But ice, wind, and water constantly wear them down. At the same time, new mountains are being created, destroyed and created in a continuing cycle of change.	Gr. 8 - **	
2. Earthquakes and Volcanoes ** Film Assoc. of Calif., 1957; 13 min. Presentation of causes of earthquakes and volcanoes, and the relationship between them. Fire and gases from inner earth boiled and erupted millions of years ago; probable cause of earthquakes and volcanoes is the aftermath of cooling. Drawing of inner composition of earth is shown. Face of earth has been altered by volcances in the past. Most volcanoes are located in mountainous areas of America and Pacific islands.	Gr. 8 - **	
3. Geological Work of Ice ** EBF, 1935; 11 min., black & white Explains how ice, through geologic ages, has been a powerful factor in sculpturing the face of the earth. Reveals the tremendous effect of ice upon soil and rock. Illustrates how glaciers form, move and alter surrounding terrain features.	Gr. 8 - **	A little adv.

* Good
** Excellent

The Earth - B. (continued)

Name and Description of Film	Other Grade Placements	Remarks
4. Geysers and Hot Springs ** Arthur Barr Prod., 1951; 11 min. Discusses hydrothermal activity as related to volcanism; explains the eruptive action of geysers; shows various types and special features of geysers and hot springs in Yellowstone National Park.	Gr. 8 - **	
5. Glaciers ** EBF, 1960; 14 min., color Tells in detail how glaciers are formed, and shows glaciers from Mt. Ranier, Washington, to the mighty glaciers of Alaska, as well as some glacier scenes of ice sheets in Antarctica and Greenland. Diagrams and animated maps show effect of glacier action and extent of ice during ice ages of the past.	Gr. 8 - **	
6. Grand Canyon ** Walt Disney, 1962; 29 min., color A three reel subject with synchronized visual impressions of the Grand Canyon Suite capturing all of the splendor and fascination of both the music and the Canyon. We see this film being useful in development of music appreciation concepts as well as being of value to the general science, earth science and geology instructor. Camera shows the Painted Desert, sunrise from the rim of the Grand Canyon, on the trail animals--bobcat, birds, tarantula, sidewinder, gila monster, etc., and a cloudburst. No commentary.		

* Good
** Excellent

The Earth - B. (continued)

Name and Description of Film	Other Grade Placements	Remarks
7. The Great Lakes--How They Were Formed ** EBF, 1951; 11 min., color Through animated drawings and live-action photography depicts the work of glaciers in forming the Great Lakes thousands of years ago. Defines present-day drainage of the Lakes and the physical characteristics of Niagara Falls. Illustrates topographical changes which occur in the region around the Falls and the Lakes.	Gr. 8 - **	
8. Lands and Waters of Our Earth * Coronet, 1957; 11 min. During a family picnic in a scenic area, a young boy observes hills, mountains, valleys, rivers, and other geographical features, and by studying a pictorial geography book, learns about different land and water formations on the earth's surface.	Gr. 8 - **	
9. Volcanoes In Action * EBF, 1935; 11 min., black & white Presents volcanism as a factor opposing gradation. Describes non-eruptive volcanic action forming batholiths, dikes, sills, columnar joints, and laccoliths. Indicates resulting mineral deposits and rock transformations. Through animated drawings and natural photography, demonstrates distribution, causes and effects of volcanic eruption. Explains cone types, illustrates lava flow and its destructive force, and depicts examples of extinct and active volcanoes.	Gr. 4 - Gr. 8 - **	For adv. student Also listed I-C

* Good
** Excellent

The Earth - B. (continued)

Name and Description of Film	Other Grade Placements	Remarks
10. What's Inside the Earth Film Assoc. of Calif., 1959; 13 min. Explores the interior of the earth, indicating the methods used to determine its structure. Explains that our knowledge of what's inside the earth has come from men who drill holes into the earth, who study volcanoes, and who interpret the vibrations of seismographs. Discusses the components of the earth's crust, mantle, and core.	Gr. 4 - Gr. 8 -	No eval. yet No eval. yet
11. Work of Rivers ** EBF, 1935; 11 min., black & white Portrays running water as the most powerful of all forces tending to alter the earth's surface. Describes the water cycle and through stream table demonstrations, animated drawings, and natural photography, explains the growth of rivers, erosion cycle, rejuvenation and deposition. Illustrates the formation of oxbows, sand bars, and deltas. Shows examples of valleys, meanders, water gaps, and alluvial fans.	Gr. 8 - **	

* Good
** Excellent

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
Page 40

I. The Earth

B. Physical features

Name and Description of Film	Other Grade Placements	Remarks
Erosion - Leveling the Land ** EBF (Earth Science Series) 1965, 14 min., color Investigates the processes of weathering, erosion, and deposition of rock materials. Shows that the constant movement of these materials from high places toward the seas levels the land. Points up some questions about why the surface of the earth has not been leveled completely.		Also listed I - C I - D

* Good
** Excellent
4-28-67

I. The Earth

C. Rocks and Minerals

Name and Description of Film	Other Grade Placements	Remarks
1. Copper--Mining and Smelting * EBF, 1950; 11 min. An account of an open-pit copper mine in operation. Illustrates the main steps in extracting pure copper from ore. Depicts processes of blasting, loading, and disposing of waste rock; loading ore in railroad cars; crushing; and washing. Emphasizes the work of the miners in their various jobs at the mine.		
2. Drilling For Oil * Pat Dowling, 1957; 22 min., color The step-by-step operations of drilling an oil well, in live photography and animation, from the initial exploration of the field to the final drilling process. Brief explanation of drilling techniques under varying conditions. Work of various members of crew is explained; crane operators, drillers, derrick men, cathead operators and others.	Gr. 8 - **	
3. Iron Ore Mining ** Academy Films, 1950; 13 min. Pictures the operation of a typical large open pit iron mine in the Mesabi Range of northern Minnesota. Shows the transportation methods necessary to move mass quantities of ore from the mines by rail car to the loading docks at Duluth, the loading of an ore boat, and the ore boat leaving the harbor on its way to the steel mills of Chicago, Pittsburgh, and Cleveland.	Gr. 8 - **	

* Good
** Excellent

The Earth - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
4. Iron--Product of the Blast Furnace ** Academy Films, 1951; 11 min. Shows how iron ore, coke, and limestone are handled at a blast furnace preparatory to charging the furnace; the making of coke from coal; and through an animated diagram demonstrates what happens inside the furnace. Pictures the molten iron being removed from the bottom of the furnace, put into a torpedo ladle car, and taken to the open hearth steel furnace.	Gr. 9 - *	
5. Making Bricks for Houses ** EBF, 1947; 11 min., black & white Portrays the story of brick-making from the digging of the basic material, shale, to the loading of finished brick into freight cars for shipment. Follows the step-by-step manufacture portraying how the materials are assembled, pulverized, and mixed; how the bricks are shaped, cut, dried, baked, and finally graded for color and quality.	Gr. 8 - **	
6. Making Glass ** EBF, 1948; 11 min., black & white Describes how three ingredients of glass--limestone, sand, and soda ash--are obtained. Through close-up shots presents a simple laboratory demonstration of basic glass-making techniques. Portrays the step-by-step large-scale manufacture of glass in a plant. Shows the technique of fitting glass panes into window frames.	Gr. 8 - **	

* Good
** Excellent

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
Page 43

I. The Earth

C. Rocks and Minerals

Name and Description of Film	Other Grade Placements	Remarks
Erosion - Leveling the Land ** EBF (Earth Science Series) 1965, 14 min., color Investigates the processes of weathering, erosion, and deposition of rock materials. Shows that the constant movement of these materials from high places toward the seas levels the land. Points up some questions about why the surface of the earth has not been leveled completely.		Also listed I - B I - D

* Good
** Excellent
4-28-67

The Earth - C. (continued)

Name and Description of Film	Other Grade Placements	Remarks
7. Rocks That Reveal the Past ** Film Assoc. of Calif., ; 12 min., color Layered, or sedimentary, rocks often contain fossils: the remains of animals and plants that were alive when the rocks were formed. Fossils enable scientists to reconstruct the life of the past. The sedimentary rocks in which fossils are found help scientists to learn about the sequence in which living things appeared on earth. The layered rocks of the Grand Canyon provide us with fossil evidence of a billion years of earth history.		Also listed I-A
8. Treasurers of the Earth ** Churchill-Wexler, 1958; 11 min. Uses animation to depict the changes in the earth's crust, and the formation of mineral deposits by natural forces. Illustrates the formation of copper, iron, tin, gold, salt, oil and coal deposits. Shows the formation of a volcano, and the reasons why we mine our mineral resources in certain areas.	Gr. 8 - **	For above aver. student
9. Volcanoes in Action * EBF, 1935; 11 min., black & white Presents volcanism as a factor opposing gradation. Describes non-eruptive volcanic action forming batholiths, dikes, sills, columnar joints, and laccoliths. Indicates resulting mineral deposits and rock transformations. Through animated drawings and natural photography, demonstrates distribution, causes and effects of volcanic eruption. Explains cone types, illustrates lava flow and its destructive force, and depicts examples of extinct and active volcanoes.	Gr. 4 - Gr. 8 - **	For adv. student Also listed I-B

* Good
** Excellent

I. The Earth

D. Soils

Name and Description of Film	Other Grade Placements	Remarks
1. Earthworms ** Pat Dowling, 1957; 11 min., color Shows the earthworm, after emergence from the cocoon, eating its way through earth, how it digests food and brings castings to the surface. Explains how the earthworm forms tunnels that help to aerate and enrich the soil and carry water to plant roots.	Gr. 3 - ** Gr. 5 - ** Gr. 7 - **	
2. Seeds of Destruction * EBF, 1948; 10 min., color Recalls the wealth of America's original resources and contrasts this with the tragic waste from devastating forest fires, floods, erosion and overworked land. Shows how federal, state and private conservation agencies cooperate in preventing the depletion of natural resources and in preserving the land. Includes animated drawings.	Gr. 8 - **	

* Good
** Excellent

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
Page 44

I. The Earth

D. Soils

Name and Description of Film	Other Grade Placements	Remarks
Erosion - Leveling the Land ** EBF (Earth Science Series) 1965, 14 min., color Investigates the processes of weathering, erosion, and deposition of rock materials. Shows that the constant movement of these materials from high places toward the seas levels the land. Points up some questions about why the surface of the earth has not been leveled completely.		Also listed I - B I - C

* Good
** Excellent
4-28-67

III. Energy

E. Magnetic energy

Name and Description of Film	Other Grade Placements	Remarks
1. Magnets ** Young America Films, 1946; 13 min., black and white Two children learn about the nature and behavior of temporary and permanent magnets. Shows that like poles repel and unlike poles attract each other, that a suspended bar magnet acts as a compass needle, that a plain bar of steel can be magnetized and made into a bar magnet, and that the magnetic force of a magnet will go through such things as glass and paper.	Gr. 2 - **	
2. Magnetic, Electric, and Gravitational Fields ** EBF, 1961; 11 min. Uses animated drawings with live-action scenes to define the characteristics of fields and to illustrate their practical applications. Shows the effects of a magnetic field on a compass needle, of the earth's gravitational field on the moon's orbit, and of electric fields on materials such as wood, glass, and steel.	Gr. 5 - ** Gr. 6 - ** Gr. 9 - **	
3. Michael Discovers the Magnet ** EBF, ; 11 min., black and white Using familiar objects in simple experiments at home, Michael learns about magnetism. Then he puts on a show for his friends to demonstrate some of the unusual things that can be done with magnets.		

* Good
** Excellent

I. The Earth

E. Water

Name and Description of Film	Other Grade Placements	Remarks
1. Arteries of Life ** EBF, 1948; 10 min., color Shows the functions of plant life in catching and storing water and in maintaining top soil; explains the water cycle and the water table; and describes nature's method of distributing life-giving water from forested areas, through the soil, into streams, and thence to drier areas miles away. Includes animated drawings.		
2. Dams ** Gateway Prod., 1959; 10 min., color Shows various types of dams made of earth, rock, and cement, and describes how they serve for water storage, flood control, and irrigation, as a source of power, and as an aid in the formation of lakes for recreation. Shows the steps in the construction of a concrete dam, pointing out that many skills are required in the process.	Gr. 7 - **	
3. Dams ** Pat Dowling, 1957; 14 min., color Points out the usefulness of dams for creation of power; storage of water for domestic, agricultural and industrial use; aid in flood control; to provide recreational areas; and to repel salt water intrusion. Shows dam construction, operation of a typical dam; and how, through a system of canals and a number of dams, water is transferred from areas of excess to areas of water shortage.		

* Good
** Excellent

The Earth - E. (continued)

Name and Description of Film	Other Grade Placements	Remarks
4. Irrigation Farming ** EBF, 1951; 10 min., black & white Describes the need for irrigation in certain sections of the U. S. and points out a natural source of irrigation water. Portrays the role of Boulder Dam in utilizing this source of irrigation. Illustrates irrigation by furrow and flooding methods, canvas dam, flooding, and sprinkling. Points out ways in which farming by irrigation leads to mutual planning among neighbors.	Gr. 7 - **	
5. Man's Problems ** EBF, 1953; 19 min., color Explains that man's increasing need for water has resulted in the building of aqueducts, reservoirs, and dams. Explains that man may assure himself of an adequate water supply by preserving nature's resources, by working with engineers, conservationists and scientists, and by taking proper care of forests, land, and rivers that make up the water sheds.	Gr. 7 - ** Gr. 10 - *	
6. Nature's Plan ** EBF, 1953; 14 min., color Describes the natural water cycle by which water from the ocean is drawn into the air by evaporation, formed into clouds, condensed to water, delivered to the earth, and returned to the ocean. Shows that nature provides watersheds where water is stored and distributed to the earth by streams and rivers.	Gr. 7 - **	

* Good
** Excellent

The Earth - E. (continued)

Name and Description of Film	Other Grade Placements	Remarks
7. A Visit to the Waterworks * EBF, 1956; 11 min., color Shows an elementary school class being taken on a tour of the local waterworks. Demonstrates how water is pumped in, chemically treated, filtered, and tested before it is piped to houses and buildings of the town. Points out major water supply sources and illustrates various uses of the community water supply.	Gr. 3 - * Gr. 7 - *	With prep.
8. Water for Dry Land: U. S. A.--The Southwest * United World, 1949; 20 min., black & white Shows how the desert is transformed into fertile farms and industrial cities as a result of building dams, development of irrigation projects, and generation of electricity to supply power.	Gr. 7 - **	
9. Water Supply ** Academy Films, 1947; 11 min. Describes how a water supply is obtained in different parts of the country. Through animated diagrams demonstrates how water soaks into the ground and is stored as ground water. Shows how water is obtained by springs, artesian wells, hand pumps, windmills, bucket wells, and electric pumps. Explains that cities in dry areas of the U. S. must bring their water supply from great distances, and shows how water for the city of Los Angeles is brought from the Colorado River some 300 miles away. Notes that research and testing assures a pure water supply.	Gr. 7 - **	

* Good
** Excellent

The Earth - E. (continued)

Name and Description of Film	Other Grade Placements	Remarks
10. What Makes Rain ** Young America, 1947; 10 min., black & white Explains, through a letter which the weather man writes to a young boy, evaporation and condensation as they apply to the water cycle. Includes animated drawings.	Gr. 5 - *	

* Good
** Excellent

SCIENCE MOTION PICTURE FILMS - Grade Four
(Addendum)

Additions to
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I. The Earth

E. Water

Name and Description of Film	Other Grade Placements	Remarks
Conserving Our Water Resources Today * Coronet, 1962, 11 min., color Presents the importance of water resources. Depicts the increased water needs. Shows ways to conserve water -- conserving ground water, holding surface water, purifying and reusing water and salt water conversion.	Gr. 7 - **	
Pipes In The House ** Churchill-Wexler, 1955, 11 min., b/w & color The three major utilities -- water, fuel, and light are described and how they are made available to the home. A family camping trip shows the contrast between primitive facilities and modern ways of turning on a faucet, a gas stove, or electric lights. Techniques for getting these utilities to the home are shown.	Gr. 5 - **	

* Good
** Excellent
4-28-67

I. The Earth

F. Air

Name and Description of Film	Other Grade Placements	Remarks
1. Air and What it Does EBF, 1962; 11 min., color The problem-solving approach to a series of real-life situations gives children an opportunity to "discover" basic concepts about air for themselves. Through demonstrations--a blowout, turning windmill, helicopter, sailboat, beach ball, floating bottle, campfire, an accordian, an experiment with a balloon fastened to an empty can which is heated, then cooled--children learn that though air cannot be seen, its many effects make known its properties and what it does: it takes up space, expands, contracts, has weight and force.	Gr. 4 - Gr. 5 -	No eval. yet No eval. yet
2. Air in Motion ** McGraw-Hill, 1956; 18 min., black & white Uses simple experiments to illustrate how an airplane flies and demonstrates the fact that moving air has less pressure than still air.	Gr. 9 - **	
3. Air All Around Us ** Young America, 1948; 10 min., black & white Explains the properties of air by demonstrating that air is a substance which exerts pressure, expands and contracts, and can be compressed.	K. - ** Gr. 6 - * Gr. 7 - **	Adv.

* Good
** Excellent

The Earth - F. (continued)

Name and Description of Film	Other Grade Placements	Remarks
4. The Nature of Burning ** McGraw-Hill, 1947; 16 min., color The ordinary candle is used as an example of burning. The film explains that the source of the heat and light is the combination (oxidation) of the vaporized fuel (hydrocarbon) with oxygen. It explains that the light comes from particles of carbon raised to incandescence and the heat from the oxidation of the fuel. Demonstrations show that the fuel must be raised to its kindling temperature, and that the combustion products are carbon dioxide and water.	Gr. 6 - **	
5. Understanding Fire ** Coronet, 1956; 10 min. A young boy, helping his father to build a fire in an outdoor fireplace, becomes interested in the characteristics of fire and its uses. He learns that the basic requirements of fire are fuel, heat, and oxygen, and realizes that the usefulness of fire depends upon its control.	Gr. 3 - ** Gr. 5 - * Gr. 7 - **	 Easy film For slow 7th
6. Wind and What it Does EBF, 1963; 11 min., color Wind as a force is demonstrated by a windmill turning, a boat sailing across the lake, a kite zigzagging in the sky, smoke blowing from a chimney. In an animated sequence warm air rises from the earth, cool air moves down, illustrating how wind is created; a pinwheel spins when held over a burning candle and over an electric hot plate. Wind works for and against man. We see a storm at sea, with huge waves caused by wind; ship captains and airplane pilots need to know direction and speed of the wind in order to travel safely. Instruments for measuring the direction and speed of wind are seen in use.		No eval. yet

* Good
** Excellent

The Earth - F. (continued)

Name and Description of Film	Other Grade Placements	Remarks
7. The Wind at Work ** Pat Dowling, 1960; 11 min., color Shows how the earth and our lives are influenced by the natural force of wind, explaining that winds change the face of the land, help planes to fly and boats to sail, disperse the seeds of plants, and bring rain and snow. Live photography, illustrations, and animation describe what makes the wind and what the wind does; simple experiments show the effect of warm and cold air.	Gr. 7 - **	

* Good
** Excellent

SCIENCE MOTION PICTURE FILMS - Grade Four

(Deletions)

No. and Name of Film	Page No.	Reason
II. Living Things		
C. Ecology		
30. Camouflage in Nature Through Pattern Matching	11	Replaced by Camouflage in Nature (2nd edition)
55. The Pond by Tabletopper Productions	19	Replaced by The Pond by International Film Bureau
D. Plant and animal economics		
3. Basic Fibers in Cloth	27	Removed from circulation by AV Dept.
17. Paper Making	32	Removed from circulation by AV Dept.
22. Story of Bananas	33	Replaced by Green Gold - Bananas
26. What is Cloth?	34	Removed from circulation by AV Dept.
I. The Earth		
B. Physical features		
9. Volcanoes in Action (also listed I-C)	39	Removed from circulation by AV Dept.
C. Rocks and minerals		
5. Making Bricks for Houses	42	Removed from circulation by AV Dept.
E. Water		
2. Dams by Gateway Productions	47	Removed from circulation

5-9-67

For discussion purposes only

SCIENCE FILMSTRIPS

(35 mm.)

for
Grade Four

Correlated to the Major Topics as found in the
Reorganized Science Curriculum

Minneapolis Public Schools
Science Department
2-5-65

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The annotations for filmstrips found on the following pages were obtained from sources such as the Wilson's Filmstrip Guide, producers' catalogs, and the Library of Congress cards.

Fall

Introduction to Science

A. Attitudes (including history)

Name and Description of Filmstrip	Other Grade Placements	Remarks
1. Scientists at Work ** American Gas Association Educational Service Bureau, 46 fr., b/w Designed to show an image of the scientist. His contributions and procedures are stressed. Thinking, designing experiments & recording data are emphasized. Activities such as life of keeping up-to-date & reporting his work are discussed. Natural gas and science occupations are related at the close of the strip. (May be obtained free from Minneapolis Gas Company. Make requests through the Science Department Office, Board of Education, Administration Building.)	Gr. 6 * Gr. 7 * Gr. 8 *	

* Good
** Excellent

Fall

II. Living Things

C. Ecology

Name and Description of Filmstrip	Other Grade Placements	Remarks
1. Harmful Insects * Jam Handy Organization, 1962; 45 fr., color (Animals - Helpful and Harmful series, 6 f.s.) $5.75 each The great variety of harmful insects. How and why they are so harmful to man in matters of health and economics. What man and nature do to combat their harmfulness.	Gr. 5 - ** Gr. 7 - **	
2. Helpful Insects * Jam Handy Organization, 1962; 39 fr., color (Animals - Helpful and Harmful series, 6 f.s.) $5.75 each The characteristics of all insects...the bee, the most helpful insect...some moths, beetles and other insects and why they are so valuable to man.	Gr. 5 - ** Gr. 7 - **	
3. Migration of Birds ** Row-Peterson Textfilms, 1958; 43 fr., color (Basic Science Education Series - Bird Study Group, 5 f.s.) $6.00 each Explores the migratory habits of some birds. Relates migration to an instinct dating back to the ice ages. Migration is not directly related to food supply since birds migrate when food may be plentiful. It is related to instinct triggered by duration of sunlight. The migratory habits of some birds are described. Give's some evidence of experimentation to prove these theories.		

* Good
** Excellent

II. Living Things - C. (continued)

Name and Description of Filmstrip	Other Grade Placements	Remarks
4. Miniature Plants of the Desert ** Moody Institute of Science, 1959; 35 fr., color (Living Things Series, 4 f.s.) $6.00 each Desert plants are wonderfully fitted to withstand the rigors of the desert. The little known miniature plants of the desert are good examples of this. Scientists are trying to solve the secrets of these tiny plants, some no larger than a grain of sand.	Gr. 4 -	Vocabulary difficult
5. Seeds and Seeds Travels ** Row-Peterson Textfilms, 1956; 42 fr., color (Basic Science Education Series - Plant Study Group, 4 f.s.) $6.00 each Many kinds of plants grow from seeds. Every seed contains a tiny plant and food for the plant. Flowering plants produce seeds in many different kinds of seed packages. Many seed plants produce great numbers of seeds. Seeds travel in many different ways. If seeds did not have good ways of traveling, few of them would be able to grow. It is important that plants produce many seeds.		

* Good
** Excellent

II. Living Things

D. Plant and animal economics

Name and Description of Filmstrip	Other Grade Placements	Remarks

1. A Class Studies Rubber **

Firestone Educational Film, 1954; 49 fr., b/w
Free

An illustrated booklet entitled "Rubber" is available at no cost, in classroom quantities.

Reports the information collected by a seventh grade class which studies a unit on rubber. Shows how rubber is made, how tires are manufactured, and some of the home and industrial uses of rubber.

2. Plant Factories **

Row-Peterson Textfilms, 1956; 44 fr., color
(Basic Science Education Series - Plant
Study Group, 4 f.s.) $6.00 each

All our food comes from green plants. Green plants furnish food for all animals; also for plants that are not green. Green plants make their own food. Green plants make sugar from carbon dioxide and water. As they make sugar, green plants throw away oxygen. The energy green plants need for making sugar comes from sunlight. Every green plant is built so that water and carbon dioxide can reach the cells where the sugar-making goes on. Green plants make many other kinds of food from sugar. Different plants store food in different storerooms. Plant factories produce many useful materials besides food.

* Good
** Excellent

Fall and Winter

I. The Earth

A. History of the earth

Name and Description of Filmstrip | Other Grade Placements | Remarks

1. How We Know About Life Long Ago **

Row-Peterson Textfilms, 1958; 41 fr., color (Basic Science Education Series - Life Long Ago Group, 6 f.s.) $6.00 each

An overview of the types of fossils footprints, insects trapped in amber, parts preserved in frozen areas, fossil mineralized "casts" and impressions and burrows. Specific examples are used to show that some animals have changed through the years while others have remained little changed.

2. Hunting Fossils *

Row-Peterson Textfilms, 1958; 43 fr., color (Basic Science Education Series - Life Long Ago Group, 6 f.s.) $6.00 each

Depicts the conditions necessary for the formation of a mineralized fossil. Refers to types of fossils: mineralized, impressions, footprints, concretions. Shows the painstaking steps in the uncovering, preparing, restoring, and exhibiting a fossil dinosaur.

3. Mammals Inherit the World *

Row-Peterson Textfilms, 1958; 44 fr., color (Basic Science Education Series - Life Long Ago Group, 6 f.s.) $6.00 each

Presents examples of early mammals and their descendant forms if any. Early horse; possum; armadillo, etc. The parallel evolution of the birds is noted as well as the development of the flowering plants.

* Good
** Excellent

I. The Earth - A. (continued)

Name and Description of Filmstrip	Other Grade Placements	Remarks

4. Stories that Fossils Tell *

Row-Peterson Textfilms, 1958; 40 fr., color (Basic Science Education Series - Life Long Ago Group, 6 f.s.) $6.00 each

Traces the evolution of the horse, elephant, and camel thru the study of their fossil remains. Relates the story of other forms of life that became extinct or have modified to lesser relative importance. (The horsetails, club mosses, etc.)

5. Up Through the Coal Age **

Row-Peterson Textfilms, 1958; 44 fr., color (Basic Science Education Series - Life Long Ago Group, 6 f.s.) $6.00 each

An overview of evolutionary biological development of animal and plant life from the trilobites, cephalopods, fish, and finally the amphibians and reptiles. The evolution of plant life is touched upon briefly with emphasis upon how modern day plants differ from their ancestors.

6. When Reptiles Ruled the Earth *

Row-Peterson Textfilms, 1958; 40 fr., color (Basic Science Education Series - Life Long Ago Group, 6 f.s.) $6.00 each

A collection of pictures identifying the common dinosaurs. It divides the reptiles into land reptiles (the dinosaurs), the flying reptiles, the water reptiles. It attempts to show some of the modern-day descendants of the dinosaurs.

* Good
** Excellent

I. The Earth

B. Physical features

Name and Description of Filmstrip	Other Grade Placements	Remarks
1. Wealth In the Ocean ** Moody Institute of Science, , 39 fr., color (Nature's Storehouse Series, 2 f.s.) $ Historically, the bulk of man's food, water and chemicals have come from the land. Because of the rapid population and industrial growth some land resources are becoming depleted. In spite of the fact the oceans cover 71% of the earth's surface we are just now beginning to tap their vast storehouse. Many products we use every day contain materials from the ocean.	Gr. 4 -	Vocabulary difficult

* Good
** Excellent

I. The Earth

D. Soils

Name and Description of Filmstrip	Other Grade Placements	Remarks
1. Animal Life and the Soil ** EBF, 1950; 54 fr., b/w., $3.00 each (Soil Conservation series, 8 f.s.) Shows how animals within the soil and on the surface contribute to soil formation and fertility: points up relationships between domestic animals and the soil.	Gr. 7 - *	
2. How Man Conserves the Soil * EBF, 1950; 60 fr., b/w., $3.00 each (Soil Conservation series, 8 f.s.) Demonstrates the meaning of soil conservation; shows actual practices used to protect soil and prevent erosion; portrays the role of individuals and organizations in promoting conservation.	Gr. 7 - *	
3. How Long Will It Last? * EBF, 1950; 68 fr., b/w., $3.00 each (Soil Conservation series, 8 f.s.) Explains the seriousness of the problem of depletion of the soil; shows how all life is dependent upon the soil: Suggests basic changes which are necessary in an attitude toward the soil.	Gr. 4 -	Vocabulary difficult
4. Minerals in the Soil * EBF, 1950; 55 fr., b/w., $3.00 each (Soil Conservation series, 8 f.s.) Discusses the minerals which make up basic soil materials; shows how soils are depleted of mineral content; explains the nature of mineral fertilizers and how they are used.	Gr. 4 -	Vocabulary difficult

* Good
** Excellent

I. The Earth - D. (continued)

Name and Description of Filmstrip	Other Grade Placements	Remarks
5. Water and the Soil ** EBF, 1950; 62 fr., b/w., $3.00 each (Soil Conservation series, 8 f.s.) Discusses the water cycle, water table, and the relationships between water and plant life; shows how the controlling of water helps to maintain its beneficial function in the soil.		

* Good
** Excellent

Winter

III. Energy

E. Magnetic energy

Name and Description of Filmstrip	Other Grade Placements	Remarks
1. Different Kinds of Magnets ** Jam Handy Organization, 1960; 29 fr., color (Magnets, Series K-3, 6 f.s. in series) $5.75 each Through experimentation and observation, the class learns why magnets are made in different sizes and shapes. They discover that the poles are where the magnetic force of attraction is greatest.	Gr. 4 - **	
2. Discovering Magnets ** Jam Handy Organization, 1960; 30 fr., color (Magnets, Series K-3, 6 f.s. in series) $5.75 each While helping his father, a boy discovers that a magnet helps them to do work. He experiments to find that the magnet will attract some objects but not others.	Gr. 2 - *	
3. Magnetic Fields * Jam Handy Organization, 1960; 40 fr., color (Magnets, Series 4-6, 6 f.s. in series) $5.75 each Students see a short history of magnets leading to their use in compasses. They observe how poles repel and attract each other. Through experimentation, they learn about lines of force and the earth's magnetic field.	Gr. 2 - * Gr. 9 - **	

* Good
** Excellent

III. Energy - E. (continued)

Name and Description of Filmstrip	Other Grade Placements	Remarks
4. Magnets Can Attract Through Objects * Jam Handy Organization, 1960; 32 fr., color (Magnets Series: K-3, 6 f.s. in series) $5.75 each Two children find that a magnet will attract iron and steel through glass, wood and other materials. They see how a magnet has a variety of uses in the home.	Gr. 2 - * Gr. 9 - *	
5. Magnets Help to Find Direction ** Jam Handy Organization, 1960, 26 fr., color (Magnets Series, 6 f.s.) $5.75 each The class sees how a compass helps to find direction. They find that the compass needle is a magnet and learn to make a variety of compasses from other magnets.	Gr. 2 - ** Gr. 3 - **	
6. What Is a Magnet? ** Benefic Press, 1961; 40 fr., color 6 f.s. in series, $ Presents basic facts about magnets.	Gr. 9 - *	

* Good
** Excellent

Spring

I. The Earth

F. Air

Name and Description of Filmstrip	Other Grade Placements	Remarks
1. Air Works for Man ** Jam Handy Organization, 1961; 34 fr., color (Understanding the Atmosphere series, 6 f.s.) $5.75 each Examples from everyday life illustrate how man utilizes air for the operation of tools such as the vacuum sweeper in the home, the air hammer in industry and other useful equipment.	Gr. 7 - **	
2. The Composition of Air * Jam Handy Organization, 1961; 40 fr., color (Understanding the Atmosphere series, 6 f.s.) $5.75 each The gases which compose air are progressively disclosed and identified. Some of the vital uses of the individual gases in our daily lives are described.	Gr. 4 Gr. 7 - **	Good for Gr. 5 or 6
3. Compressed Air ** Visual Sciences, Suffern, N. Y., 1953 25 fr., color, $19.50 set (Air-#533 series, 5 f.s.) Drawings are used to demonstrate the practical everyday uses of compressed air and to show how compressed air is used in musical instruments, children's toys, tires, spray guns, and other commercial products.	Gr. 6 - *	

* Good
** Excellent

I. The Earth - F. (continued)

Name and Description of Filmstrip	Other Grade Placements	Remarks
4. The Importance of Air in Nature * Jam Handy Organization, 1961; 37 fr., color (Understanding the Atmosphere series, 6 f.s.) $5.75 each The importance of oxygen, nitrogen, carbon dioxide and water vapor is clearly demonstrated. Logical picture sequences explain oxidation and the ways in which gases of the air are exchanged in nature.	Gr. 7 - **	
5. The Physical Characteristics of Air * Jam Handy Organization, 1961; 40 fr., color (Understanding the Atmosphere series, 6 f.s.) $5.75 each Visualized demonstrations to show that air will expand and contract, separate and liquefy. The additional characteristics of a gas which air displays are also visually explained.	Gr. 4 - Gr. 7 - **	Good for Gr. 5 or 6
6. Using Air Pressure ** Visual Sciences, Suffern, N. Y., 1953 24 fr., color, $19.50 set (Air-#533 series, 5 f.s.) Captioned cartoons are used in demonstrating the power of air pressure and its uses in such common household devices as the suction cup, medicine dropper, vacuum cleaner, and coffee pot.		

* Good
** Excellent

I. The Earth - F. (continued)

Name and Description of Filmstrip	Other Grade Placements	Remarks
7. What Air Is ** Visual Sciences, Suffern, N. Y., 1953 22 fr., color, $19.50 set (Air-#533 series, 5 f.s.) Simple demonstrations are used to describe the physical properties of air and its chemical composition.		
8. What Air Does ** Visual Sciences, Suffern, N. Y., 1953 29 fr., color, $19.50 set (Air-#533 series, 5 f.s.) Captioned cartoons are used to show various things which air can do. For elementary grades.		
9. What Air Pressure Is ** Visual Sciences, Suffern, N. Y., 1953 26 fr., color, $19.50 set (Air-#533 series, 5 f.s.) Captioned cartoons are used to explain what air pressure is, how it is measured, how it manifests itself, and how it is utilized in everyday life.		

* Good
** Excellent

I. The Earth - F., (continued)

Name and Description of Filmstrip	Other Grade Placements	Remarks
10. What is Air Pressure? *	Gr. 4 -	Good for Gr. 5 or 6
Jam Handy Organization, 1961; 44 fr., color (Understanding the Atmosphere series, 6 f.s.) $5.75 each	Gr. 7 - **	
Air pressure is defined by portrayal of the effects of the weight and movement of molecules of air. Example: show how air pressure can be increased and how decreased.		

* Good
** Excellent

JP:la
1-15-64

EQUIP. & SUPPLIES

BASIC SCIENCE SUPPLIES FOR ELEMENTARY SCHOOLS February 1966

Item No.		Unit	Unit Price
32-0140	ALCOHOL, Denatured	quart	.34
17-0100	ALUMINUM FOIL, 15" x 50', to waterproof table tops	roll	.62
17-0110	ALUMINUM FOIL, 18" x 50', for use under an aquarium or terrarium	roll	1.03
28-0100	ANIMAL PEN, 18" x 24" x 18" high	each	6.61
28-0105	ANIMAL PEN, cage, 9" x 9" circular	each	4.55
28-0110	ANT HOME, Turtox 220A167	each	7.50
	AQUARIUMS, TERRARIUMS AND SUPPLIES:		
28-0030	ACID NEUTRALIZER	ounce	.45
28-0040	AERATOR, Saxon	each	6.00
28-0200	AQUARIUM, 3 gallon, seamless	each	6.34
28-0300	AQUARIUM, 6 gallon	each	9.07
28-0340	AQUARIUM CEMENT	lb.	.60
	AQUARIUM COVER (include pattern w/requisition)		
28-0390	9-7/8" x 5-3/4", clear plexiglass	each	.42
28-0400	9-7/8" x 5-3/4", glass, double strength	each	1.00
28-0490	9-1/2" x 17-1/2", clear plexiglass	each	1.27
28-0500	9-1/2" x 17-1/2", glass, double strength	each	1.23
28-0600	AQUARIUM AND TERRARIUM SEALER	tube	.30
28-2100	CHARCOAL, Chunk	5# bag	.43
28-3000	DIP NET, 3" wide, 3-1/2" deep	each	.35
28-3020	DIP TUBE, plastic, 16", no scraper attachment	each	.90
28-3025	AQUARIUM METAL SCRAPER, long handle	each	.60
28-3290	FEEDING RING, 2"	each	.20
47-3260	GLASS SCRAPER, all metal	each	.18
47-0340	BLADES for above scraper	each	.02
28-4160	GRANITE CHIPS	lb.	.034
28-4180	GRAVEL	lb.	.05
28-7460	SAND	lb.	.15
28-8100	SOIL, sterile	bushel	1.50
28-9320	TEMPERATURE CONTROL OUTFIT: Thermostat #340 to include one of the following:	each	5.85
28-4310	PENCIL HEATER, 25 w, for aquarium, 1 to 3 gallon	each	2.00
28-4320	PENCIL HEATER, 50 w, for aquarium, 4 to 6 gallon	each	2.00
28-4330	PENCIL HEATER, 75 w, for aquarium, 7 to 15 gallon	each	2.75
28-0700	ASPIRATOR, Chapman pump, Cenco 13205-3, w/adapters to connect to sink	each	3.25
28-0705	HOSE FOR ASPIRATOR, black (indicate footage needed)	ft.	.27
28-0800	BALANCE, demonstration, clamp and support only (must order meter stick #28-5380 to complete set)	each	2.60

BASIC SCIENCE SUPPLIES FOR ELEMENTARY SCHOOLS

Item No.		Unit	Unit Price
28-0820	BALANCE, TRIPLE BEAM, stainless steel, capacity 610 gms Note: by use of auxiliary weights this balance can be used to a maximum of 2610 gms	each	15.35
28-0825	AUXILIARY WEIGHT SET, for use with Triple Beam Balance. Increases capacity from 610 gms to 2610 gms. Set consists of 2 1,000 gm weights and 1 500 gm weight.	set	4.50
28-0830	WEIGHT, 500 gm, for use with Triple Beam Balance (to replace any lost in Auxiliary Weight Set)	each	1.50
28-0835	WEIGHT, 1,000 gm, for use with Triple Beam Balance (to replace any lost in Auxiliary Weight Set)	each	1.50
28-0840	BALL AND RING	each	4.11
15-1200	BALLOONS, rubber	doz.	.46
28-0900	BAROMETER, ANEROID, 6" diameter, round wooden case	each	3.33
28-2150	BATTERY CELL HOLDER for "D" dry cell, mounted on board with Fahnestock clips for easy connection	each	.50
	BEAKER, Griffin, low form, Pyrex		
28-0940	100 ml	each	.40
28-0960	150 ml	each	.39
28-0980	250 ml	each	.39
28-1000	400 ml	each	.46
28-1020	BEAKER, Griffin, low form, stainless steel, 600 ml	each	2.97
28-1030	BELL, DOOR, electric, D.C., 2-1/2" diameter	each	1.64
28-1060	BELL OUTFIT, electric, dry cell, push button, 1 lb annunciator wire and staples	each	4.12
28-1500	BOTTLES, 4 oz. wide mouth (gas collecting bottle)	doz.	.66
28-1520	BOTTLES, 8 oz. wide mouth (gas collecting bottle)	doz.	.89
28-1540	BOTTLES, 4 oz. (baby food jar type with bakelite screw cap)	doz.	1.61
28-1570	BROM THYMOL BLUE, Crystaline, Free acid form, Harleco #862 (to detect the presence of carbon dioxide -- for the study of the constituents of air and the respiratory activities of plants and animals)	1-gram bottle	1.50
28-1600	BRUSH, Test tube, 3/4" x 3-1/2"	each	.13
28-1620	BURNER, Alcohol lamp, glass, 4 oz.	each	.74
28-1640	BURNER, Turner, liquid petroleum, tank + LP, Bunsen-type	each	7.95
70-4550	REPLACEMENT TANK	each	.98
28-1700	BUZZER, electric	each	1.73

Item No.		Unit	Unit Price
28-2010	CALCIUM HYDROXIDE SOLUTION, limewater (Also see Lime Water Tablets #28-4810)	1# bottle	.60
28-2030	CANDLES, Paraffin	doz.	.48
28-2040	CASTER CUPS, glass	each	.10
28-2050	CAT'S SKIN, half	each	3.64
28-2060	CELL, student's demonstration	each	3.15
28-2110	CHIMNEY, lamp	each	1.00
28-2120	CLAMP, Burette	each	1.20
28-2140	CLAMP, pendulum	each	2.30
28-2160	CLIP, Fahnestock, to be used to mount electrical apparatus (10 in package)	pkg.	.17
28-2200	COMPASS, magnetic, 16 mm diameter	each	.25
28-2240	COMPASS, magnetic, about 45 mm diameter	each	.70
28-2300	COMPOUND BAR, bi-metal	each	.78
28-2400	CONDUCTOMETER, four 5" wires on handle, overall length 13 inches	each	2.05
28-2500	CORKS, assorted, xx quality, sizes 0-11 (100 in bag)	bag	1.35
28-2540	CORK BORER, set of 6, 1/2" largest borer	set	6.20
28-2560	COTTON, absorbent, not sterilized	lb.	.90
28-2600	CULTURE DISHES, Petri, Pyrex, 100 mm x 15 mm	pair	.60
17-3380	CUPS, measuring, Set of 4 (1 C, 1/2 C, 1/3 C, 1/4 C)	set	.36
28-2700	CYLINDER, graduated, Tuttle, short form, 100 ml capacity	each	2.70
28-2720	CYLINDER, hydrometer jar, 275 ml capacity, 13-38" high	each	2.40
28-3015	DISHES, evaporating, Coors 430, 75 mm diameter, 30 mm high, 70 ml capacity	each	.47
28-3040	DISSECTING NEEDLE, wooden handle, bent needle	each	.10
28-3050	DISSECTING NEEDLE, wooden handle, straight needle	each	.07
28-3100	DROPPER, medicine, (12 to pkg)	pkg.	.46
28-3140	DROPPING BOTTLE, 30 ml	each	.35
59-0130	DRY CELL, 1½ volt, #6, diameter 2-1/2", height 6"	each	.64

Item No.		Unit	Unit Price
28-3200	ELECTRIC PLATE, 3 heat, 1000 watt, 110 volt	each	6.14
28-3240	ELECTROMAGNET, horseshoe type	each	11.40
28-3260	ELECTROSCOPE, flask form, 250 ml, Pyrex Erlenmeyer flask	each	2.85
28-3280	ETHYL ACETATE, for killing insects	lb.	1.26
28-3300	FEHLING'S SOLUTION, A	16 oz bottle	1.20
28-3320	FEHLING'S SOLUTION, B	16 oz bottle	1.55
28-3400	FILE, Triangular, 4"	each	.38
28-3500	FILTER PAPER, qualitative, 100 circles per package, 11 cm diameter	pkg.	.44
28-3600	FLASK, Erlenmeyer, narrow mouth, Pyrex, 250 ml	each	.48
28-3620	FLASK, Erlenmeyer, narrow mouth, Pyrex, 500 ml	each	.61
28-3800	FUNNEL, plastic, 73 mm, or 2-7/8" top diameter	each	1.14
28-4000	FUNNEL, Pyrex, 65 mm or 2-1/2" top diameter	each	.75
28-4100	FUNNEL, thistle top, 30 cm or 12" length, 35 mm or 1-1/4" diameter	each	.36
	GLOVES, rubber:		
28-4120	size 8	pair	.80
28-4130	size 9	pair	.80
28-4140	size 10	pair	.80
28-4200	GYROSCOPE, simple form, 5.5 cm diameter, support and starting cord	each	1.25
28-4360	HYDROCHLORIC ACID (HCL)	lb.	1.03
28-4400	HYGROMETER, Humidiguide, direct reading	each	9.00
28-4500	IRON FILINGS	1# carton	.38
28-4600	JAR, battery, cylindrical, 1 gallon	each	1.42
28-4800	LAMP, incandescent, miniature, 2-1/2 volt maximum, screw base	each	.25
28-4805	LENSES, demonstration set, 3.75 cm diameter, 6 in set	each	5.25
28-4810	LIME WATER TABLETS (See Calcium Hydroxide Solution, #28-2010)	each	.0075
28-4820	LITMUS PAPER, blue, 100 strips in vial	vial	.09
28-4840	LITMUS PAPER, neutral, 100 strips in vial	vial	.09
28-4860	LITMUS PAPER, red, 100 strips in vial	vial	.09

Item No.		Unit	Unit Price
28-4940	MAGNETS, bar, steel, 2 in box with keepers	set	1.80
28-5100	MAGNETS, ceramic cylinders, 3/8" x 1/8", #1054	each	.03
28-5000	MAGNETS, ceramic cylinders, .52" x 25", #866	each	.03
28-5140	MAGNETS, "floating"	each	3.25
28-5200	MAGNETS, horseshoe, 2.8 cm	each	.60
28-5240	MAGNETS, horseshoe, 4 cm	each	2.20
28-5250	MAGNETS, natural, lodestone	each	.22
28-5260	MAGNETIC NEEDLE, on stand	each	2.45
28-7100	MAGNIFIER, round, 3" diameter reading glass with handle, 2x to 3x	each	1.25
28-5300	MAGNIFIER, small, premium plastic, 3-5/8" long, fitted with two spherical convex lens (3x and 7x) and two cylindrical magnifiers	each	.31
28-5280	MAGNIFIER, tripod, 10x	each	1.10
28-5320	MAT, asbestos, 10" x 16"	each	.65
28-5340	MAT, wire gauze, asbestos center, 4 inch	each	.21
28-5380	METER STICK, maple, metric and English scales	each	.85
28-5400	MICROSCOPE, ELECTRIC, including: 50X and 100X objectives, 12 prepared slides, micromount cards, one 32 page booklet, "The Microscope in Elementary Science", and wood case	each	18.18
18-4600	ELECTRIC LIGHT BULB, 6 watt, 115 volt, candelabra bayonet base (replacement bulb for item #28-5400)	each	.18
28-5410	MICROSCOPE, model ESM, 100X Bausch and Lomb (No Sub) Cat. 31-33-03 (Price includes illuminator, item #28-5425)	each	15.00
28-5420	MICROSCOPE, ZOOMSCOPE, Model STZ 100 Bausch and Lomb (No Sub) Cat. 31-21-03 Magnification 25x through 100 x Zoom. (Price includes illuminator, item #28-5425)	each	53.00
28-5425	ILLUMINATOR, portable, Bausch and Lomb (No Sub) Cat. 31-33-03 Rite-Lite	each	3.00
28-5426	LAMP, replacement for microscope illuminator (Rite-Lite) Item #28-5425, 9-3/4 watt, candelabra, screw base, Bausch and Lomb, (No Sub) Cat. 31-31-40	each	.15
28-5500	MICROSCOPE SLIDES, culture	each	.12
28-5600	MICROSCOPE SLIDES, plain, 72 per box	box	1.10
28-5700	MIRROR, concave and convex, 75 cm diameter, 20 cm focus	each	1.00
28-5740	MIRROR, plane, square, 10 cm x 10 cm	each	.20
28-5800	MORTAR AND PESTLE, porcelain, Coors 522, 100 mm diameter, 60 mm high, 115 mm pestle length	set	1.66
28-5840	MOTOR, St. Louis, with 2 bar magnets; electromagnet attachment, $6.15	each	13.50

Item No.		Unit	Unit Price
28-5860	NEEDLES, DARNING, 10 in pkg.	pkg.	.25
28-5880	NEEDLES, KNITTING, 12 in pkg.	pkg.	.55
28-5900	PAN, Dissecting, 12" x 7-1/2" x 5/8" deep	each	1.20
28-5910	PAN, METAL, vitreous enamel, 16-3/8" x 10" x 2-1/8"	each	2.50
28-5920	PAN, METAL, vitreous enamel, 20-1/2" x 12-3/4" x 2-3/8"	each	3.64
28-5930	PAPER, BLUEPRINT, 5 x 7, 24 sheets	pkg.	.49
28-5940	PAPER, BLUEPRINT, 8 x 10, 24 sheets	pkg.	1.29
28-5960	PINS, SILK, #2, for mounting insects (100 per pkg.)	pkg.	.43
28-5980	PITH BALLS, 12	pkg.	.80
28-6100	PLANT FOOD, "Plantabbs", 100 in pkg.	pkg.	.20
28-6000	PLANETARIUM, Universal, shows day and night, seasons, length of day, phases of moon, earth-sun-moon phases, includes manual	each	24.00
28-6200	PLATES, glass, flat, 12 to pkg. 2" x 2" x 1/16" thick	pkg.	.30
28-6220	POTS, FLOWER, unglazed earthenware, 4" diameter	each	.10
28-6240	PRISM, equilateral, flint glass, 75 mm long	each	2.00
28-6300	PULLEY, double, Bakelite	each	1.15
28-6340	PULLEY, single, Bakelite	each	.80
28-6400	PULLEY, double tandem, Bakelite	each	1.55
28-6440	PULLEY, triple tandem, Bakelite	each	2.05
28-6500	PUMP, model, plastic, force	each	5.65
28-6540	PUMP, model plastic, lift	each	4.95
28-7000	RADIOMETER	each	.80
28-7140	RECEPTACLE, screw base, for incandescent lamp, miniature, item #28-4800 (unmounted)	each	.25
28-7145	RECEPTACLE, screw base, for incandescent lamp, miniature, (mounted on board with Fahnestock clips for easy connection) -- 2 lamps included	each	.94
28-7020	RAIN GAUGE, wedge shape	each	3.95
28-7300	ROD, FRICTION, glass, 300 mm x 13 mm	each	1.10
28-7340	ROD, FRICTION, hard rubber, 250 mm x 13 mm	each	.70
28-7360	ROD, soft iron (used as electromagnet core)	each	.25
28-7400	RUBBER STOPPERS, assorted sizes, 00-8 (solid, one-hole and two-hole)	2 lb.	2.40

Item No.		Unit	Unit Price
17-5800	SALT SHAKER, glass, for iron filings	each	.08
28-7480	SCALE, balance, spring dial type, 250 gms or 9 oz. capacity, Cenco 5410 - or equal, (to determine the weight of objects weighing less than one-half pound and small forces)	each	2.25
28-7490	SCALE, balance, spring, dial type, 500 gms or 18 oz. capacity, Cenco 5510 - or equal, (to determine the weight of objects weighing one pound or less and to measure small forces)	each	2.25
28-7500	SCALE, balance, spring, dial type, 2,000 gms or 72 oz. capacity	each	2.25
28-8000	SCIENCE KIT AND MANUAL, contains almost all necessary initial equipment for elementary science	each	42.00
28-8040	SILK PAD, exciting	each	.55
28-8200	SPOON, DEFLAGRATING, iron, 3/4" diameter cup, total length 15"	each	.26
28-8300	SUPPORT, iron, rectangular base, 4-7/8" x 8", w/rod	each	1.90
	SUPPORT, ring with clamp		
28-8400	2-1/2" inside diameter	each	.95
28-8500	3-3/8" inside diameter	each	1.05
28-8520	SWITCH, KNIFE (unmounted) single pole, single throw	each	.40
28-8525	SWITCH, KNIFE (mounted on board with Fahnestock clips for easy connection) single pole, single throw	each	1.13
59-0570	SWITCH, PUSH BUTTON (unmounted)	each	.50
28-8530	SWITCH, PUSH BUTTON (mounted on board with Fahnestock clips for easy connection)	each	1.08
28-8600	TELEPHONE RECEIVER	each	5.00
28-8640	TELEPHONE TRANSMITTER	each	4.00
28-8700	TEST TUBES, Pyrex, 6" x 5/8"	each	.0508
28-8740	TEST TUBE CLAMP (Holder)	each	.11
28-8800	TEST TUBE RACK, wood, 6 holes and 6 pins	each	.70
28-9000	THERMOMETER, Celsius, (Centigrade) laboratory type, (-10°C to 110°C)	each	1.80
28-9005	THERMOMETER, Celsius, (Centigrade) student type, (-30°C to 50°C) inexpensive thermometer mounted on plastic backing	each	.15
28-9040	THERMOMETER, Fahrenheit, laboratory type, (0°F to 230°F)	each	1.40
28-9050	THERMOMETER, Fahrenheit, student type	each	.15
28-9100	THERMOMETER, metal, protected bulb, white enamel, scale in black	each	1,08
28-9200	THERMOMETER, outdoor, metal, protected bulb, mounting brackets, swivel type	each	1.53
28-9300	THERMOMETER, wooden back, natural finish	each	1.20

Item No.		Unit	Unit Price
16-3420	THREAD, black No. 50	spool	.09
16-3520	THREAD, white No. 50	spool	.09
28-9340	TONGS, beaker, Fisher improved	pair	6.50
28-9360	TONGS, crucible, Parkerized steel	pair	.38
	TOOLS:		
32-4740	HAMMER, claw, 10 oz. head	each	2.24
28-4300	HAMMER, geologist, 22 oz. head	each	5.50
32-6300	PLIERS, combination, adjustable, 6"	each	.50
32-7460	SAW, HACK, adjustable	each	1.18
32-0930	BLADE, HACKSAW, 12", 14 teeth	each	.10
32-7550	SCREWDRIVER, 4" blade, Stanley #20	each	.71
32-8750	SHEARS, tinners snips, 3" cutting length, Wiss #9	pair	2.29
28-9400	TUBING, GLASS, lead-potash, 6 mm outside diameter	lb.	.55
28-9420	TUBING, RUBBER, 3/16", black	ft.	.27
28-9440	TUBING, RUBBER, 3/16", red	ft.	.27
	TUNING FORK, unmounted		
28-9500	128 vps	each	5.50
28-9520	256 vps	each	5.50
28-9540	320 vps	each	5.15
28-9560	384 vps	each	5.15
28-9580	512 vps	each	5.00
15-9200	TWEEZER, length - 4-5/8"	each	.31
12-8600	VERMICULITE	5# bag	.20
28-9600	VOLT-AMMETER, pocket type, DC, range 0-10 volts, 0-35 amperes	each	3.60
28-9640	WATCH GLASS, Pyrex, 75 mm diameter	each	.15
28-9700	WEATHER VANE, with base, metal, directions plainly marked	each	.83
28-9720	WEIGHTS, BALANCE, AVOIRDUPOIS, iron, class T, 1/2 oz. to 1 lb. (set of 8)	set	5.00
28-9740	WEIGHTS, METRIC, HOOKED, 10 gm - 1 kgm	set	14.25
28-9750	WEIGHTS, BALANCE, METRIC, in wood block, 1 gm - 500 gm	set	8.25
28-9770	WIRE, copper, annunciator, #22, vinylite covered	1# coil	2.34
28-9780	WIRE, iron, 17 gauge	4 oz spool	.34
28-9800	WOOD SPLINTS, 500	pkg.	.63

BASIC SCIENCE SUPPLIES FOR ELEMENTARY SCHOOLS

Item No.		Unit	Unit Price
	BIRD CARDS, Audubon, postal card size, 50:		
28-1100	Summer	box	1.20
28-1200	Winter	box	1.60
28-1300	Spring	box	1.60
28-1400	BIRD CHARTS, Audubon, 20" x 30", set of 4: Winter, Summer, Game Birds, and Birds of Prey	set	3.55
28-7200	ROCK CYCLE CHART	each	10.95
	ROCK COLLECTION:		
28-7210	KINDERGARTEN, 5 specimens to illustrate the Kindergarten concepts, each 3" x 3" x 2" (unmounted)	set	1.40
28-7220	GRADE ONE, 9 specimens to illustrate the First Grade concepts, each 3" x 3" x 2" (unmounted)	set	1.40
28-7230	GRADE FOUR, 9 specimens to illustrate the Fourth Grade concepts, each 3" x 3" x 2" (unmounted)	set	1.40

(Schools may purchase emergency supplies directly, paying for same out of the school building's funds. Principals are requested to accumulate receipts of at least five dollars ($5.00) and then make a general requisition (form G1000) to cover the items purchased. Attach all receipts and send the requisition to the Finance Department for reimbursement from the individual school's supply allotment.)

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1/27/66